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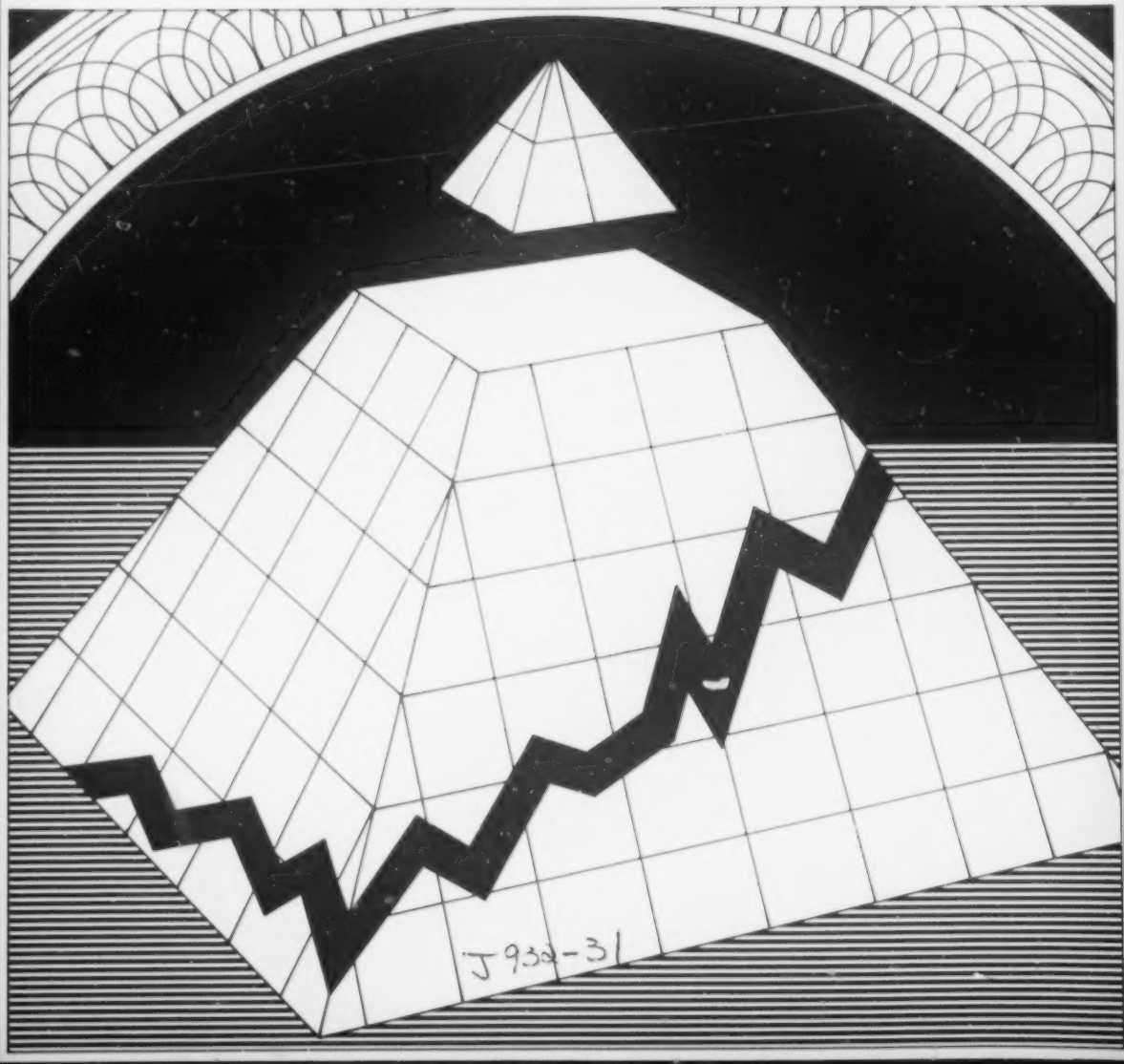
AUGUST 1989

Policies for Reducing the Current-Account Deficit



CBO STUDY

POLICIES FOR REDUCING THE CURRENT-ACCOUNT DEFICIT

The Congress of the United States
Congressional Budget Office

PREFACE

The dramatic rise in the current-account deficit during the 1980s has prompted calls from both the Congress and the Administration to enact measures to reduce the nation's dependence on foreign capital. Some policymakers fear that continued large current-account deficits could cause sharp changes in interest rates and in the value of the dollar, and perhaps have wider economic consequences as well. Others have a less pessimistic view of the possible short-run effects of large current-account deficits. Virtually everyone agrees, however, that the shortage of domestic saving, of which the current-account deficit is a result, could have serious consequences in the longer term.

This study, undertaken at the request of the House Budget Committee, explains how the large current-account deficit came about and why reductions in the budget deficit are likely to be the most effective means of reducing the U.S. payments imbalance. The study also provides estimates of the reduction in the current-account deficit that various policy actions in the United States would bring about. The measures that are considered include reductions in the budget deficit sufficient to meet the targets in the Balanced Budget Act, changes in monetary policy, and coordinated measures involving monetary and fiscal policies both in the United States and in other countries.

Frank Russek, Stephan Thurman, and James Kiefer of the Congressional Budget Office's Fiscal Analysis Division wrote the paper under the direction of Frederick Ribe and Robert Dennis. The analysis reflects major contributions by Victoria Farrell, George Iden, John Peterson, and Tilman Ehrbeck. Mark Decker, Jeanne Dennis, Nicholas Dugan, and Patricia Phill performed the simulations and research assistance. The authors wish to thank Charles Adams, Donald Alexander, Trevor Alleyne, Liam Ebrill, Owen Evans, Richard Haas, William Helkie, Peter Hooper, Yuseke Horiguchi, Thomas Lutton, Beth Pinkston, Jeffrey Sachs, Elliot Schwartz, and Lois Stekler, for their valuable comments.

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SUMMARY

The current-account deficit, which mainly reflects the excess of imports of goods and services over exports, is the most closely watched measure of the balance of payments. In 1980, the United States had a small surplus in its current account; now it has one of the largest deficits in the world measured relative to GNP.

This development is of serious concern to some policymakers in the Congress and the Administration, who argue that large current-account deficits could increase the chance of a recession, intensify pressures for protectionist legislation, and require capital financing that is badly needed elsewhere in the world. Other policymakers are more sanguine about these possibilities, arguing that the U.S. current-account deficit is unlikely to have serious consequences unless financial markets overreact to it. Nonetheless, nearly all policymakers are concerned about the decline in national saving, of which the current-account deficit is only a symptom.

A good way to understand why the United States has a large current-account deficit is to look at the discrepancy between its production and its expenditures. An economy with a trade deficit is said to be living beyond its means by spending more than it produces. Policymakers have tried or actively considered a number of ways to reduce the current-account deficit, such as coordinating international economic policies and imposing trade sanctions. There are questions, however, about the effectiveness and, in some instances, about the desirability of these approaches.

Many economists believe that the most effective way to reduce the current-account deficit is by reducing domestic spending or "absorption" relative to income by increasing the national saving rate. They argue further that this is most effectively done by increasing "public" saving--that is, by reducing the budget deficit.

HOW MONETARY POLICY AFFECTS THE CURRENT-ACCOUNT DEFICIT

In recent years, the United States has relied almost exclusively on the Federal Reserve's monetary policy to influence the direction of the economy, but monetary policy is both ill-suited and disinclined to reduce the current-account deficit. In a system of floating exchange rates, such as that in which the United States participates, monetary policy can have significant effects on such domestic economic conditions as interest rates, prices, and, in the short term, output levels. But monetary policy actions have little lasting impact on the current account.

Monetary policy would be ineffective in efforts to reduce the current-account deficit because such policy actions have offsetting effects on the external balance. Suppose, for example, that monetary restraint lowers domestic demand, and that this leads to an improvement in the current account because it reduces income and the demand for imports. This latter effect is largely offset by the appreciation in the exchange rate that accompanies monetary restraint (higher interest rates, in this case, attract demand for domestic assets). Appreciation in the exchange rate would worsen the current account by switching expenditures from goods and services produced domestically to those produced abroad. The net effect of the offsetting factors on the current account is likely to be small.

Austerity Policies

What would happen if monetary policy tried to improve the current account permanently through austerity policies? To accomplish this under flexible exchange rates, the Federal Reserve would have to maintain a path of increasing monetary restraint in order to offset the effect of the appreciation in the exchange rate. The result would be a continuous decline in the growth of GNP and increasingly more unemployment. This dilemma illustrates why a single policy cannot be relied on to address more than one target. In particular, monetary policy cannot effectively maintain satisfactory levels of domestic output and employment if it also is trying to improve the current-account balance.

Real Exchange Rates and the "J-Curve"

Even if the exchange rate does not change in nominal terms, it can change in real terms if domestic prices change relative to foreign prices. In particular, faster increases in U.S. prices than in prices abroad--even if nominal exchange rates do not change--will appreciate the dollar in real terms and vice versa. Like nominal dollar appreciation, such relative price changes work to worsen the current-account deficit by making U.S. goods less competitive.

The effects on the current account of changes in the real exchange rate can, however, be perverse at first. The current account may initially worsen before it improves in response to a real depreciation in the exchange rate, mostly because it takes time for the growth of import volumes to decline in response to higher import prices. This phenomenon is known as the "J-curve effect," because the downward movement followed by an upward movement in the current account resembles the letter "J."

Intervention in Exchange Markets

Intervening in exchange markets is a specialized monetary policy operation that can sometimes affect external balances. It involves governments' buying and selling currency on world exchange markets with the aim of manipulating the exchange rate. Carrying out intervention successfully is difficult because large amounts of funds must be devoted to the task to accomplish even small changes in exchange rates. Intervention is more likely to affect exchange rates when no attempt is made to offset or "sterilize" its repercussions on the domestic money supply. Unsterilized intervention is more effective, because it changes interest rates and thus stimulates flows of private capital between currencies, which reinforce the effects of intervention by governments in exchange markets.

HOW FISCAL POLICY AFFECTS THE CURRENT-ACCOUNT DEFICIT

Most analysts believe that the problem of a large current-account deficit can be solved more effectively with fiscal than with monetary

policy. Unlike monetary restraint, which produces offsetting movements in incomes and exchange rates, fiscal restraint improves the current-account deficit through both channels, reducing income and depreciating the exchange rate.

COORDINATION OF POLICY ACTIONS

Most economists agree that efforts to improve the U.S. current-account balance would be enhanced if economic policies were coordinated, not only within the United States, but also between the United States and its trading partners.

Domestic Policy Coordination

Coordinating U.S. monetary and fiscal policies makes it possible to achieve more than one economic goal. But domestic policy coordination may be no more effective than uncoordinated action if fiscal and monetary policies are not assigned to the appropriate targets. For example, to achieve both balance of payments and domestic economic goals, monetary and fiscal policies not only must work together, but fiscal policy must be assigned to the goal of improving the current account. The reason is that flexible exchange rates limit the ability of monetary policy to affect the current account.

International Policy Coordination

For the same reason that domestic monetary policy is not very effective in improving the current-account imbalance, coordinating monetary policies among countries is also unlikely to have much success. However, coordinating fiscal policies among countries can help to improve the U.S. current account. Foreign fiscal stimulus combined with restraint by domestic fiscal authorities would be effective and would spread the burden of adjustments among all participating countries. Nevertheless, foreign fiscal policy stimulus might be undesirable from a foreign point of view, because it could raise prices abroad and would reduce national rates of saving for those countries. At any rate, fiscal stimulus abroad is not a substitute for domestic fiscal restraint.

Trade Policies

Trade policies, such as tariffs and import quotas, are often proposed as solutions to a variety of trade-related problems. Such policies, however, are not apt to be particularly effective in reducing the current-account deficit. U.S. residents may simply substitute imports not subject to a tariff or a quota for imports that are subject to such measures. The effects of broad trade restrictions can be offset by market adjustments in exchange rates. Furthermore, they may bring about foreign retaliation.

QUANTITATIVE ANALYSIS OF FISCAL AND MONETARY POLICY EFFECTS

The Congressional Budget Office (CBO) has developed estimates of the amount by which various changes in monetary and fiscal policy would reduce the current-account deficit. The estimates are drawn from simulations with large computer-based models of the world economy. Like the conceptual arguments summarized above, these estimates suggest that the largest improvements in the current-account deficit are likely to come from significant budget deficit reductions, while changes in monetary policy are likely to have small impacts. The estimates further suggest that coordinated changes in fiscal policy in the United States and other countries could lead to moderately larger reductions in the current-account deficit than those brought about by budget deficit reduction in the United States alone. These changes, though, would also increase foreign price levels.

Baseline Projections

CBO's estimates are calculated relative to its January 1989 baseline economic projections, which show what might happen if no policies are changed. The baseline estimates indicate that the budget deficit will fall gradually from $155 billion in 1988 to $122 billion in 1994. The current-account deficit will decrease from $132 billion to $75 billion during this period. The baseline projections also show a 2.9 percent average rate of depreciation, gradual declines in interest rates, steady inflation at about 4.6 percent, and real growth of 2.9 percent through 1990 and about 2.3 percent thereafter.

SUMMARY TABLE 1. SELECTED SIMULATION RESULTS: THE EFFECTS OF ALTERNATIVE POLICY ACTION ON THE CURRENT-ACCOUNT AND BUDGET DEFICITS (By calendar years)

	1989	1990	1991	1992	1993	1994	1995	1999
Federal Purchases Reduced to Meet Deficit Targets in the Balanced Budget Act								
Current Account								
Billions of dollars	-0.0	12.3	24.9	36.9	44.8	42.2	41.8	57.3
Percentage of GNP	-0.0	0.2	0.4	0.5	0.6	0.6	0.5	0.6
Budget Deficit								
Billions of dollars	0.0	38.7	71.8	101.8	123.5	117.6	126.1	167.4
Percentage of GNP	0.0	0.7	1.3	1.7	1.9	1.7	1.7	1.7
Federal Purchases Reduced by 1 Percent of GNP ($52 billion in 1989)								
Current Account								
Billions of dollars	11.0	14.7	17.9	21.3	25.1	29.4	34.3	62.0
Percentage of GNP	0.2	0.2	0.3	0.3	0.3	0.4	0.4	0.6
Budget Deficit								
Billions of dollars	33.1	38.9	49.0	61.2	75.2	90.6	107.2	180.6
Percentage of GNP	0.6	0.7	0.9	1.0	1.2	1.3	1.5	1.9
Federal Purchases Reduced by 1 Percent of GNP, and Money Supply Increased by 4 Percent								
Current Account								
Billions of dollars	3.6	11.4	15.0	19.5	24.5	29.9	35.7	67.3
Percentage of GNP	0.0	0.2	0.2	0.3	0.4	0.4	0.5	0.6
Budget Deficit								
Billions of dollars	63.1	70.3	86.0	101.5	117.2	132.9	148.6	215.5
Percentage of GNP	1.3	1.3	1.5	1.7	1.8	1.9	2.0	2.2
Federal Purchases Reduced by 1 Percent of GNP in U.S., Increased by 1 Percent Abroad, and Money Supply Raised by 4 Percent in U.S. and Abroad								
Current Account								
Billions of dollars	11.2	19.2	22.8	27.5	32.9	39.4	47.0	93.0
Percentage of GNP	0.2	0.3	0.4	0.4	0.5	0.5	0.6	0.9
Budget Deficit								
Billions of dollars	67.2	75.0	90.3	105.0	119.7	134.3	148.7	210.7
Percentage of GNP	1.4	1.4	1.6	1.8	1.9	2.0	2.0	2.1
Exchange-Rate Depreciation Sufficient to Produce Same Current Account Improvement As Achieved by Reaching Balanced Budget Act Targets								
Current Account								
Billions of dollars	-0.0	3.2	26.8	38.0	41.3	44.1	42.8	59.0
Percentage of GNP	-0.0	0.1	0.5	0.6	0.6	0.6	0.6	0.6
Budget Deficit								
Billions of dollars	0.0	-2.5	3.9	5.9	1.4	-4.6	-12.5	-36.5
Percentage of GNP	0.0	-0.0	0.1	0.1	0.1	-0.0	-0.1	-0.3

SOURCE: Congressional Budget Office.

NOTE: Details appear in Appendix B.

Simulation Results

The following major conclusions, also shown in the Summary Table, summarize the estimates from the simulations in this study:

- Reducing the budget deficit in a manner consistent with the Balanced Budget Act targets would reduce the current-account deficit by more than $40 billion from its projected baseline levels. In 1994, the additional improvement in the current account roughly equals 35 percent of the 1994 improvement in the budget deficit. Simulation results surveyed from other studies indicate even more improvement in the current account, amounting to roughly $65 billion or 55 percent of the improvement in the budget deficit.

- If a sustained reduction in the budget deficit were coordinated with an expansionary U.S. monetary policy, the effect on the U.S. current account would be about the same as without the change in monetary policy.

- Foreign fiscal and monetary stimulus undertaken in concert with U.S. monetary stimulus and fiscal restraint--sometimes called "international policy coordination"--could magnify the reduction in the U.S. current-account deficit caused by policy actions in the United States alone. The effect would be moderate, however, and would result primarily from higher prices abroad.

- To reduce the current-account deficit, the United States at times has relied on dollar depreciation brought about by changes in market sentiments rather than by specific monetary or fiscal policy actions. The simulations suggest that, with this more passive approach, a real dollar depreciation of roughly 5 percent to 8 percent (in addition to the depreciation already projected by CBO) would be needed for several years to produce the same reduction in the current-account deficit that would most likely occur from meeting the Balanced Budget Act targets. Relying on dollar depreciation resulting solely from a change in market sentiments eventually would enlarge the budget deficit, since higher interest rates would raise federal net interest payments.

CHAPTER I

THE CURRENT ACCOUNT AND THE FACTORS THAT AFFECT IT

A nation's current account measures all of its imports and exports of goods and services, including flows of interest and dividends into and out of the country. During the 1980s, this most commonly used measure of the U.S. balance of payments changed by nearly $150 billion, shifting from a small surplus to the largest deficit in the industrial world, and to one of the largest when measured relative to output or gross national product (GNP) (see Table 1). Despite some recent improvement, the 1988 imbalance in the current account was $127 billion, and most forecasters now expect it will decline only gradually in the years to come.

ISSUES SURROUNDING THE CURRENT-ACCOUNT DEFICIT

Many economists find the persistently large U.S. current-account deficit to be a serious public policy concern. When the current account is in deficit, the United States has to borrow abroad to cover the shortfall. This borrowing transfers wealth abroad and reduces future living standards in the United States, unless the capital inflows that accompany these deficits are used to finance investment in factories or other productive assets in this country.

Some economists also argue that a persistently large current-account deficit increases risks of large changes in interest and exchange rates--changes that could destabilize economies the world over and increase the risk of a recession in the United States.[1] Still others worry that a persistent trade deficit makes economically damaging protectionist policies more likely, or endangers national security by

1. For expressions of this view, see Stephen Marris, *Deficits and the Dollar: The World Economy at Risk, Policy Analyses in International Economics No. 14* (Washington, D.C.: Institute for International Economics), 1985; and *World Economic Outlook: A Survey by the Staff of the International Monetary Fund* (Washington, D.C.: International Monetary Fund, April 1988), pp. 22-24.

promoting foreign ownership of important U.S. businesses. From a worldwide perspective, some economists argue that capital inflows to the United States to cover its trade deficit are also troublesome in that such funds may be more desperately needed elsewhere, particularly in less developed countries.

Not all economists agree that a current-account deficit is a national problem in and of itself. Some believe that sharp swings in financial markets are more likely to come about as a result of deteriorating domestic economic conditions, such as rising inflation rates,

TABLE 1. CURRENT-ACCOUNT SURPLUSES OF MAJOR OECD COUNTRIES

Year	United States[a]	Canada	France	West Germany[a]	Italy	Japan[a]	United Kingdom
				Billions of U.S. Dollars			
1980	1.5	-1.0	-4.2	-13.8	-10.0	-10.8	7.3
1981	8.2	-5.1	-4.8	-3.6	-9.1	4.8	13.9
1982	-7.0	2.3	-12.1	5.1	-6.2	6.9	8.2
1983	-44.3	2.5	-4.7	5.3	1.5	20.8	5.9
1984	-104.2	2.1	-0.8	9.8	-2.5	35.0	2.8
1985	-112.7	-1.4	-0.4	16.4	-3.7	49.2	4.3
1986	-133.2	-7.6	3.0	39.2	2.6	85.9	0.2
1987	-143.7	-8.0	-4.1	45.2	-1.0	87.0	-4.8
1988	-126.5	-9.2	-3.8	48.5	-4.0	79.6	-26.1
				Percentage of GDP/GNP			
1980	0.1	-0.4	-0.6	-1.7	-2.2	-1.0	1.4
1981	0.2	-1.7	-0.8	-0.5	-2.2	0.4	2.7
1982	-0.3	0.8	-2.2	0.8	-1.5	0.6	1.7
1983	-1.4	0.8	-0.9	0.8	0.4	1.8	1.3
1984	-2.8	0.6	-0.2	1.6	-0.6	2.8	0.6
1985	-2.9	-0.4	-0.1	2.6	-0.9	3.7	0.9
1986	-3.3	-2.1	0.4	4.4	0.4	4.4	0.0
1987	-3.4	-1.9	-0.5	4.0	-0.1	3.6	-0.7
1988	-2.8	-1.9	-0.4	4.0	-0.5	2.8	-3.2

SOURCE: Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*; Organization for Economic Cooperation and Development (OECD), *Economic Outlook* (June 1989).

a. Percentages use gross national product (GNP) rather than gross domestic product (GDP).

rather than because of current-account deficits per se.[2] These same analysts also often argue that the purchase of U.S. property by foreign investors, far from being a threat to national security, shows foreigners' confidence in U.S. success and gives them a stake in it.

Nevertheless, nearly all analysts agree that the low national saving rate--of which the current-account deficit is a symptom--is a matter of real concern. Moreover, many economists believe that increasing national saving can reduce the current-account deficit. They argue that the main factor causing the trade deficit to mushroom has been the sharp decline in national saving during the 1980s. Private plus public (national) saving has declined by more than five percentage points as a share of net national product (NNP) during this decade. This drop reflects both a declining private saving rate and the growth in the federal budget deficit.

In recent years, policymakers have tried or actively considered a number of measures to reduce the trade deficit, including depreciating exchange rates by coordinating domestic and foreign monetary policies, and imposing trade sanctions. For example, under the Plaza Accord--adopted in 1985 by the finance ministers of the United States, Japan, West Germany, France, and the United Kingdom--depreciating the dollar on world exchange markets was the principal policy initiative to reduce the U.S. trade deficit. Central banks intervened in exchange markets to influence the dollar's value. Within the United States, some analysts as well as members of both the Congress and the Administration have at various times raised the possibility of imposing trade sanctions such as tariffs and trade quotas.

None of these approaches, however, is likely to be effective in reducing trade imbalances significantly. Managing exchange rates, for example, is unlikely to work because they are largely determined by autonomous market forces and are hard for governments to permanently target with conventional measures. The most common approach to managing exchange rates--namely, intervening in exchange markets--is unlikely to affect exchange rates significantly for any

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2. For relatively sanguine views of the significance of the current-account deficit, see Charles L. Schultze, "Statement before the Committee on the Budget, U.S. House of Representatives," January 25, 1989, p. 8; and Jeffrey D. Sachs, "Global Adjustments to a Shrinking U.S. Trade Deficit," *Brookings Papers on Economic Activity* (Washington, D.C.: Brookings Institution, 1988:2), pp. 639-647.

length of time, particularly if the intervention is not allowed to affect national money supplies. Governments can manipulate exchange rates by harnessing overall national monetary policies to the task, but only at the cost of sacrificing important domestic policy objectives in the process. Even then, the resulting changes in exchange rates may not have much effect on the current-account balance, since such monetary policy actions have offsetting effects on the current account that operate through channels other than the exchange rate. For example, if the Federal Reserve Board permits it, lower interest rates can accompany intervention by a country in exchange markets to depreciate the currency and improve the current account. This decline in interest rates can stimulate domestic demand and increase imports by enough to eliminate any improvement in the current account. Trade sanctions may not be effective in reducing overall trade imbalances, and can have damaging side effects: they may, for example, encourage retaliation by other countries.

Many economists argue that the most effective remedy for the large current-account deficit may be a fiscal policy that reduces the federal budget deficit. They point out that U.S. monetary policy and restrictive trade measures have limited ability to reduce the current-account deficit and that coordinated international monetary policy measures, which have played a major role in efforts by the United States and other countries to influence exchange rates, are also unlikely to be very successful in dealing with the current account.

Exactly how effective fiscal policy will be in reducing the trade deficit depends, however, on the outcome of what might be considered a race between two sectors of the economy that are stimulated by federal deficit reduction: exports and domestic investment. If investment wins this race, the improvement in the trade deficit will be smaller; if exports win, however, then the trade deficit will show greater improvement.

ANALYZING THE BALANCE OF PAYMENTS

The U.S. balance of payments consists of two accounts that mirror each other--the current account and the capital account (see Table 2). Because the two accounts are so closely related, it is possible to analyze

TABLE 2. U.S. BALANCE OF PAYMENTS: SUMMARY OF CURRENT AND CAPITAL ACCOUNTS (In billions of dollars)

	1980	1987	1988
Current-Account Balance			
Exports of Goods and Services	342	446	530
Merchandise trade	224	250	319
Other	118	196	211
Minus:			
Imports of Goods and Services	333	576	642
Merchandise trade	250	410	446
Other	83	166	195
Equals:			
Net Exports	9	-130	-112
Merchandise trade	-26	-160	-127
Other	35	30	16
Minus:			
Net Unilateral Transfers	8	14	15
Equals:			
Current-Account Deficit (+)	2	-144	-127
Capital-Account Balance			
Net Inflow of Foreign Capital	58	218	219
Offical reserves	15	45	39
Other	43	173	180
Minus:			
Net Outflow of U.S. Capital	86	76	82
Official Reserves	8	-9	4
Other	78	87	85
Equals:			
Capital-Account Surplus (+)	-28	142	137
Memorandum:			
Statistical Discrepancy Between the Current and Capital Accounts	25	2	-11

SOURCE: Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*.

NOTE: This table uses somewhat different terminology than that appearing in the official balance-of-payments accounts. Because of rounding, the column entries do not always add to the totals.

balance-of-payments issues by using either account. This report places most of its emphasis on the current account, since it is the one now given the most attention by economists and policymakers.

The current account primarily reflects the trade balance, or the difference between exports and imports of goods and services. In contrast, the capital account shows capital inflows (U.S. borrowing from foreigners) and capital outflows (U.S. lending to foreigners). In theory, a current-account deficit is always matched precisely by a capital-account surplus.[3] The reason is that all imports of goods and services not offset by exports of such items must be paid for by issuing financial claims like stocks, bonds, and U.S. dollars, which are then recorded in the capital account. Increases in these claims by foreigners reflect new capital inflows to the United States, which in turn produce a capital-account surplus when they exceed the increase in U.S. claims against foreigners.

Because this report focuses on the current account, it mainly considers how policy changes affect exports and imports of goods and services. This focus on goods and services is a feature of what economists call the "absorption" approach to analyzing the balance of payments. This approach emphasizes the relation between net exports and the amount by which domestic spending exceeds domestic production. It also closely follows the "fiscal" approach, which stresses the connection between the trade and fiscal deficits.

Another way to analyze the balance of payments--the "monetary approach"--is less relevant for purposes of this report, and thus is not used here. There are two reasons for omitting it. First, the monetary approach does not focus on the current-account balance, the deficit measure that is of most concern in this report. Instead, it concentrates on a broader balance-of-payments measure--the "official settlements balance."[4] This measure is of less concern to the United States than

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3. The data on net exports and net capital flows, however, come from different sources, and usually do not match exactly. Therefore, a "statistical discrepancy" is reported in the official accounts to reconcile the current and capital accounts in the balance of payments. It is widely accepted that most of the "statistical discrepancy" is the result of poor measurement of capital flows. Thus, virtually all discussion of the "balance of payments" refers to the current-account balance.

4. The balance of payments on an official settlements basis is similar to the overall balance derived by combining the current account and the capital account, but it excludes government payments for the purpose of buying currencies on exchange markets or settling financial accounts with other governments.

the current account because most policy interest in this country focuses on the amount by which spending exceeds production (the current-account deficit) and on the willingness of the rest of the world to finance this excess. The balance of payments on an official settlements basis is not a good indicator from this point of view, since a given official settlements balance is consistent with many different current-account balances. The second reason for omitting the monetary approach to the balance of payments is that the official settlements balance is useful mainly when countries are operating with fixed exchange rates, and the United States now operates with flexible exchange rates.

Although the absorption approach is commonly used in analyzing the balance of payments, the approach also has its critics. The absorption approach is closely related to a form of macroeconomic analysis known as "income-expenditure" analysis. This analysis has come under attack in recent years by, among others, economists who take issue with its central premise that changes in the budget deficit can affect national saving (that is, income not devoted to absorption). These critics suggest instead that, at least under some conditions, changes in the budget deficit give rise to offsetting changes in household saving that leave overall national saving and absorption unaffected.[5] However, empirical support for these and other critiques of the mainstream income-expenditure and absorption methods of analysis has thus far been insufficient to overthrow more mainstream views, and the approaches discussed in this paper continue to be widely used.

Because the absorption approach concentrates on the discrepancy between domestic production and spending by domestic residents, it can focus on improving the current account either with policies that mainly reduce spending or with policies that mainly increase production. Most of the discussion in this study stresses policies that reduce spending, since policies that expand output are less likely to improve the current account.

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5. See, for example, Robert Barro, "Are Government Bonds Net Wealth?" *Journal of Political Economy* (November 1974). For a critical discussion, see B. Douglas Bernheim, "Ricardian Equivalance: An Evaluation of Theory and Evidence," *National Bureau of Economic Research Macro Annual* (1987), pp. 263-304.

One reason that policies to expand output may not work is that the necessary labor and capital are limited. Consequently, when they are nearly fully used, output cannot be expanded for long without risking an increase in inflation. This appears to be the case now in 1989, a time when the Federal Reserve, the Congressional Budget Office, and other agencies estimate that the economy is operating at or near full capacity. Even when capacity for expanding output exists, however, no policy tool can guarantee an increase in output of the type necessary to reduce the current-account deficit--in other words, expanding output either by increasing exports or by substituting domestically-produced goods and services for imports. In principle, at least two policy tools for accomplishing such an expansion exist--managing a depreciation of the dollar, and persuading policymakers in other countries to stimulate their nations' demands for U.S. exports. But neither approach seems feasible.

A managed depreciation of the dollar could expand U.S. output and improve the current-account deficit at the same time by giving foreigners an increased incentive to buy U.S. exports and U.S. consumers an incentive to switch their purchases from imports to U.S. goods and services. But it is hard to manage a permanent depreciation in the exchange rate of the dollar. As the discussion in the next chapter shows, policymakers find it difficult to target the exchange rate by permanently intervening in currency markets. The sensitivity of exchange rates to intervention is so small that huge amounts of intervention are often needed. These amounts can easily overwhelm the foreign currency reserves available to policy authorities. Although monetary and fiscal policy actions can depreciate the dollar through their effects on interest rates, this process is not the same as attempting to "manage" a dollar depreciation by directly intervening in currency exchange markets.

Expanding demand in other countries, for its part, is often an infeasible strategy for expanding U.S. output relative to its absorption, since policymakers abroad often have more pressing policy objectives--such as containing domestic inflation or increasing national saving--that may be incompatible with correcting imbalances in the U.S. current account.

Recent Current-Account Developments in the United States and in Other Countries

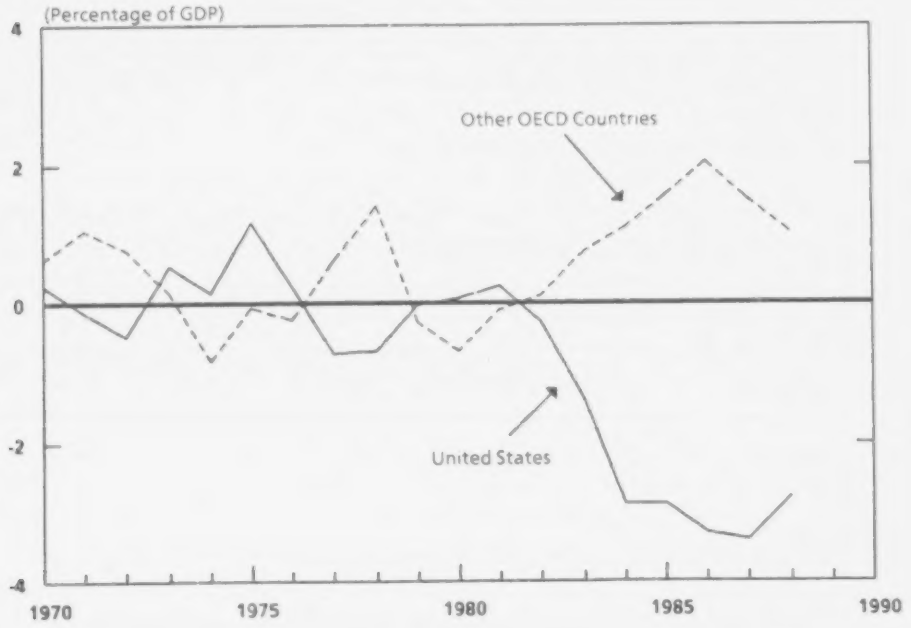
During the 1980s, the U.S. current account deteriorated dramatically, moving from a surplus of $2 billion at the beginning of the decade to deficits of $144 billion in 1987 and $127 billion in 1988. Correspondingly, the capital account registered a similar shift in the other direction. Most of the change in the current-account balance between 1980 and 1988 stems from a $101 billion increase in the merchandise trade deficit over the same period. The nonmerchandise trade surplus (which mainly comprises service payments and receipts, including net interest payments) shrank by $19 billion. Most of the shift to a large capital-account surplus reflects a greater net inflow of foreign capital, other than official reserves. The net outflow of U.S. capital has been relatively constant.

Because U.S. exports match foreign imports from the United States, while U.S. imports match foreign exports to the United States, any increase in the current-account deficit of the United States must be matched by an increase in the surplus of the rest of the world as a whole. Figure 1 shows that the large increase in the U.S. current-account deficit during the 1980s was in fact accompanied by a large increase in the combined current-account surpluses of the other major members of the Organization for Economic Cooperation and Development (OECD)--Canada, France, West Germany, Italy, Japan, and the United Kingdom--even when measured relative to their combined gross domestic products (GDPs). Within OECD, the largest improvements were in Japan and West Germany (see Figure 2).

The current accounts of the newly industrialized countries in Asia also shifted substantially toward surplus, in part reflecting competitive gains from technological developments and structural changes within their economies. Even countries with large external debt problems, such as Mexico and Brazil, shifted strongly toward surpluses in their current accounts. In these countries, however, deficit reductions were partly a response to a reduction in capital inflows from external creditors who reacted to an increased risk of defaults. These countries devalued their currencies and adopted restrictive macroeconomic policies explicitly aimed at increasing national saving, reducing imports, and encouraging exports.

Some countries, notably Japan, adopted new regulations giving freedom to invest funds abroad, which strengthened the shift toward current-account surpluses in these countries and the shift toward the current-account deficit in the United States. This deregulation raised the demand for foreign currencies by those in the newly deregulated countries that were interested in investing funds abroad. As a result, deregulation helped to appreciate foreign currencies (including the U.S. dollar) and depreciate local currencies, both of which increased local exports relative to imports.

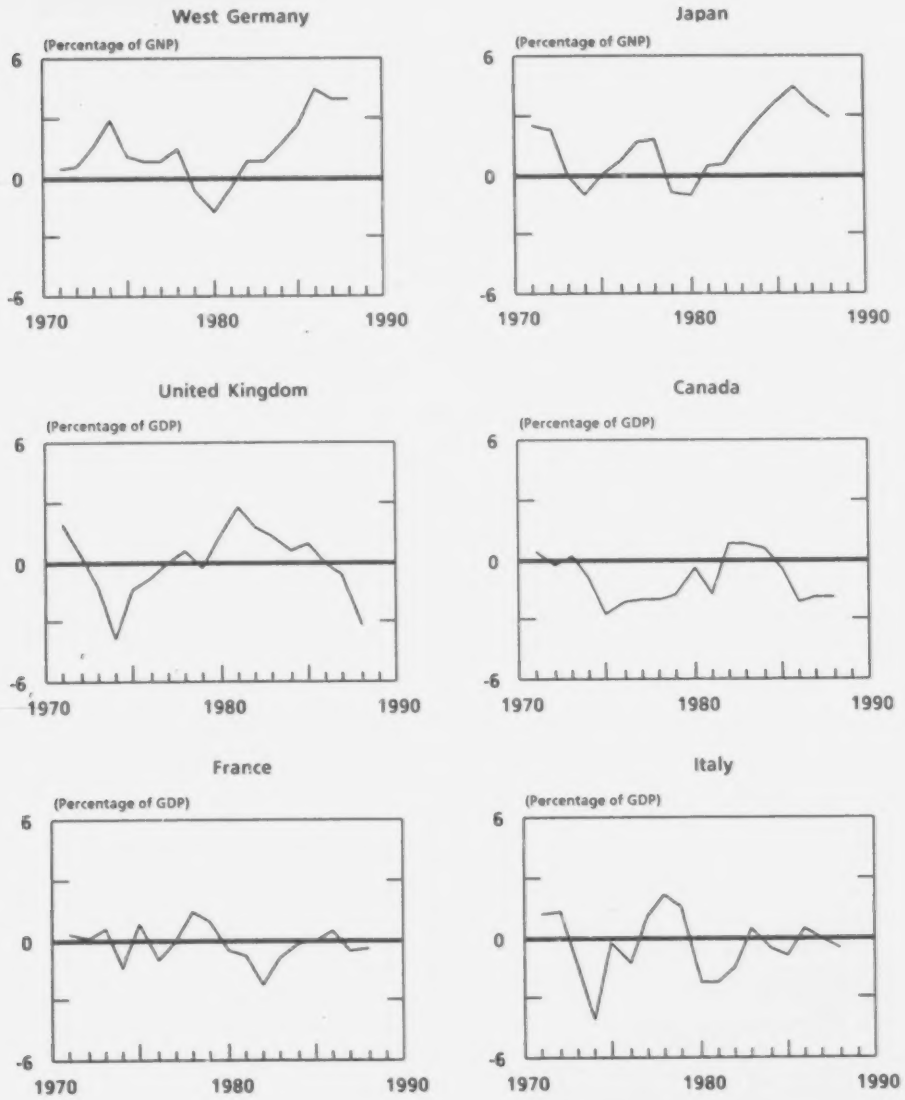
Figure 1.
Current-Account Balances of the United States and Its Six Major OECD Trading Partners



SOURCE: International Monetary Fund, *International Financial Statistics*; Organization Ecomomic for Coopreration and Development (OECD), *Economic Outlook*.

NOTE: The six major OECD trading partners of the United States are Canada, France, West Germany, Italy, Japan, and the United Kingdom. The figure shows the sum of their current accounts, measured in dollars, as a percentage of their combined gross domestic product (GDP), also measured in dollars.

Figure 2.
Current-Account Balance of the Six Major OECD Trading Partners of the United States



SOURCE: Organization for Economic Cooperation and Development (OECD), *Economic Outlook*.

NOTE: GNP = gross national product; GDP = gross domestic product. The graphs in this figure are the breakdowns of the aggregate balance displayed in Figure 1.

HOW ABSORPTION AND THE EXCHANGE RATE AFFECT THE CURRENT ACCOUNT

Both monetary and fiscal policy actions can affect the current account through their effects on absorption and the exchange rate of the dollar. As described in the next chapter, however, the effects fiscal policy has through absorption and exchange rates tend to reinforce each other, while the effects of monetary policy through absorption and exchange rates tend to cancel or offset each other. As a result, fiscal policy is more effective in changing the current account. To provide a background for that discussion, this section explains in detail the direct link between absorption and the current account, as well as the link between exchange-rate movements and the current account.

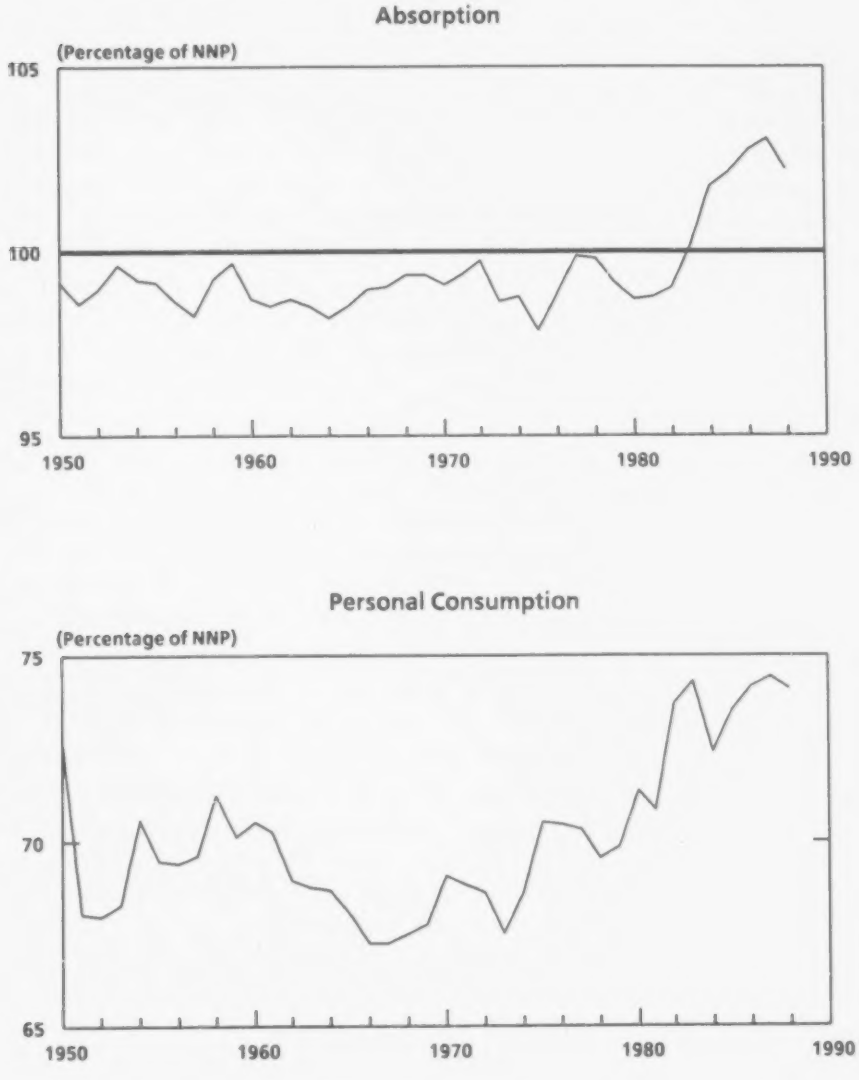
How Absorption Relates to the Current-Account Balance

A good way to understand why the United States has a large current-account imbalance is to look at the discrepancy between its production (including exports) and its total expenditure on, or absorption of, goods and services (including imports). Absorption represents all purchases by households, businesses, and governments of investment as well as their consumption of goods and services, both domestically made and imported. When absorption exceeds production, the excess expenditure must mean an excess of imports over exports. Therefore, the excess of absorption over production is the country's current-account deficit.

As Figure 3 shows, the ratio of absorption to output rose sharply when the U.S. current-account deficit emerged in the early 1980s after many years of current-account surpluses. Increased spending on consumer goods was primarily responsible. On average, absorption has been 2 percent greater than production since 1983. In contrast, it was 1 percent lower than production in the 1950-1982 period.

Absorption and "Overspending." An economy with a trade deficit is commonly said to be "overspending its income." This phrase recognizes that national income arises only from production. Avoiding national overspending, however, does not mean that each and every

Figure 3.
U.S. Absorption and Personal Consumption



SOURCE: Department of Commerce, Bureau of Economic Analysis.

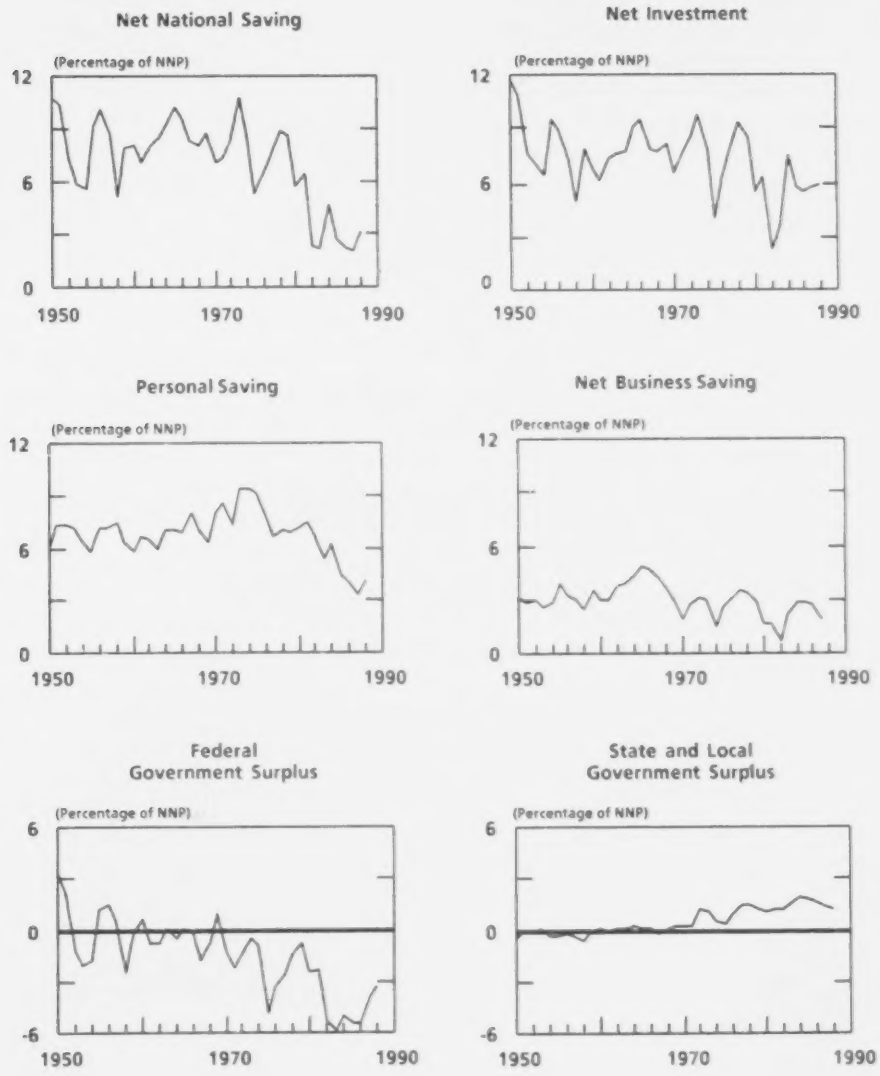
NOTE: NNP = net national product.

sector of the economy must spend only what it earns. In fact, the different parts of an economy normally spend either more or less than they earn. Households usually spend less than their income, paying part of the remainder in taxes (along with businesses) and saving the rest. Businesses, by contrast, normally spend more than they earn after taxes, borrowing the shortfall from households to finance their investments. Governments can either spend more or less than they collect in taxes. When they spend more, they compete with businesses for household savings; when they spend less, they add to the funds available for business investment. When the net saving or surplus of households does not cover the net deficits of business and government, the economy is said to be "overspending." It is overspending because business investment plus government purchases exceed household saving plus tax payments.

Developments in the United States in recent years illustrate the parallel between absorption and production on the one hand and saving and investment on the other hand. During the 1980s, for example, the rise in absorption relative to output was mirrored by a decline in national saving as a proportion of income, which was not completely matched by a corresponding decline in investment (see Figure 4). Instead, it gave rise to a large increase in the current-account deficit. The fall in saving was about evenly divided between personal saving and federal government dissaving, which was reflected in the rise in the budget deficit during this period.

How did the rise in U.S. absorption relative to production in the early 1980s come about? First, the rising federal deficit and the declining household saving rates brought about a reduced national saving rate. Most analyses focus on the direct effects of this lower national saving rate, since it directly increased the ratio of absorption to output. But it also helped to bring about a 40 percent rise, or appreciation, in the exchange rate between the U.S. dollar and other major world currencies from 1980 to 1985 (see Figure 5). This appreciation indirectly slowed the growth of output relative to absorption by making exports more expensive to foreigners and imports less expensive to domestic residents.

Figure 4.
U.S. Net Investment, Net National Saving, and Its Components



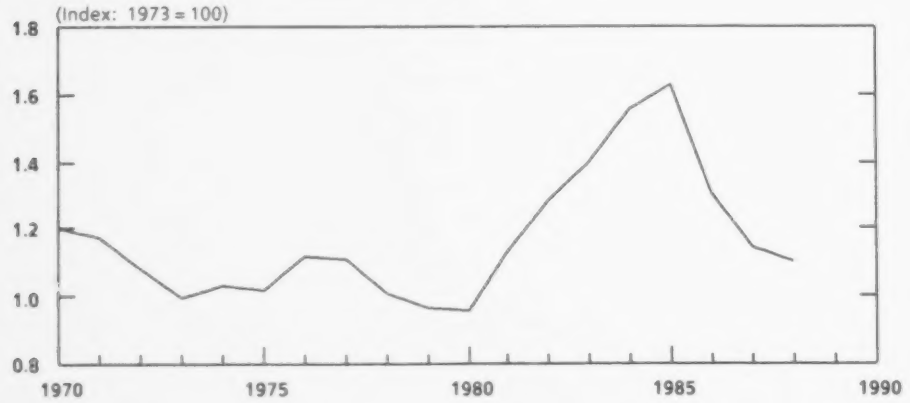
SOURCE: Department of Commerce, Bureau of Economic Analysis.

NOTE: NNP = net national product.

The Saving Rate and Absorption. Policymakers can directly reduce the excess of absorption over output in several ways, some of them more desirable than others. One way is to reduce personal consumption or government purchases, which would lower imports by contracting absorption. Many analysts would argue that this is a desirable way to reduce the current-account deficit, since it simultaneously increases the national saving rate. Another approach is to reduce business investment. While this approach would reduce absorption and the current-account deficit, it would also reduce the long-run growth of the economy. From a practical viewpoint, most analysts agree that the most effective way to narrow the gap between absorption and output is by reducing the federal deficit, thus raising the national saving rate.

Trade Policies and Absorption. How effective are tariffs and import quotas as a means of reducing the deficit? While such trade policy measures are useful for some purposes, they are unlikely to be effective in changing the overall current-account deficit. Economists sometimes recommend tariffs to solve problems affecting individual industries.

Figure 5.
The Foreign Exchange Value of the Dollar



SOURCE: Congressional Budget Office; Federal Reserve Board.

NOTE: The graph is a trade-weighted index of the dollar in terms of six foreign currencies: Canada, United Kingdom, West Germany, France, Italy, and Japan. Foreign currency units per dollar.

For example, tariffs are helpful when foreign suppliers of a given good are competing unfairly by pricing below cost. However, trade policy tools such as tariffs and quotas may be relatively ineffective measures for reducing the overall current-account deficit. Because they will not significantly affect either private or government saving rates, they are unlikely to reduce overall absorption relative to output.

How the Exchange Rate Affects the Current-Account Balance

The exchange rate--the value of the dollar in terms of other world currencies--plays a central role in helping economic policy affect the gap between absorption and output and, thus, the current-account deficit. The behavior of exchange rates is sufficiently complex, however, that it is useful to pay some attention to such questions as how exchange rates are determined, and how they affect the balance of payments, before discussing how economic policies to reduce the current-account deficit work.

How the Exchange Rate Is Determined. In today's system of flexible exchange rates, currency values are determined by supply and demand for different currencies in world markets. The exchange rate of the dollar, for example, rises (appreciates) when more dollars are wanted or demanded at current exchange values than are available for sale in exchange for other currencies. Conversely, the dollar falls in value, or depreciates, when more dollars are for sale at current rates than buyers are demanding.

Buyers and sellers of currencies may be private traders or governments. Governments often try to bid exchange values up or down. Since most currency available to trade is in the hands of the private sector, however, most analyses of how exchange rates are determined focus on factors that cause agents in the private sector to increase or decrease their demand for a given currency.

An important influence on the exchange rate is the difference between interest rates and other asset yields in one country and those in another. If, for example, interest rates are higher in the United States than in other major countries, there is likely to be pressure on the dollar to appreciate. There is a demand for dollars by investors who

want to move their financial holdings from other currencies to the dollar so they can benefit from the higher U.S. interest rates.

This simple view of the source of upward and downward pressure on a given currency value, however, has an important qualification to it--namely, that the expectations of investors for future changes in that currency's value play a key role. Financial investments in dollars are only attractive relative to those in another currency if investors do not expect the dollar to lose value during the time that they are holding their dollar investments. Thus, most discussion of how exchange rates are determined is stated in terms of differences in interest rates between currencies adjusted for expected changes in the exchange rate.

Another qualification to this simple view of determining exchange rates is that, if investors view assets denominated in different currencies as imperfect substitutes for each other, then the overall quantity of dollar-denominated assets in circulation may in part determine exchange values. That is, a typical investor may view a portfolio that consists mainly of dollar-denominated securities as less desirable than one with a similar yield that was half in dollars and half in other currencies. As the U.S. debt increases because of continuing current-account deficits, imperfect substitution among different currencies would imply that there would be downward pressure on the value of the dollar, since dollar assets would be more and more unwelcome in investors' portfolios.

The Effect of Real Depreciation and Appreciation on the Current Account. Changes in currency values affect the current account only when they are perceptible in real or price-adjusted terms. One must take into account differences between prices in the United States and those in other countries before being able to judge whether the real exchange rate of the dollar has changed. If, for example, the dollar appreciates relative to the yen by 30 percent in stated ("nominal") terms, but Japanese prices independently rise 30 percent faster than U.S. prices, there is no net change in the real value of the dollar, and no real appreciation has taken place. In short, the dollar will not be able to purchase any more Japanese goods than it did before.

Because of the influence of such domestic and foreign price movements, changes in real exchange values can take place even when no change is occurring in the nominal exchange rate on world currency

markets. For example, if the value of the U.S. dollar remains roughly fixed relative to other important currencies while U.S. prices rise more quickly than those in other countries, the dollar will appreciate in real terms despite its nominal stability.

The Effect of Exchange Rates on the Current Account. Changes in the real exchange rate can have significant effects on trade flows and the current account. These effects occur through several channels. A real depreciation, for example, improves the current account both by stimulating exports and reducing imports. Exports increase because foreign demand is likely to increase when foreign-currency prices of U.S. exports are lower relative to the prices of foreign-produced alternatives. Higher dollar prices of export goods encourage export production to satisfy increased demand. Imports are discouraged because their dollar prices tend to rise, shifting demand toward domestically-produced goods.

A real depreciation also reduces the current-account deficit by indirectly cutting absorption relative to production at home, and doing the reverse abroad, through its effects on real income and wealth. With higher domestic prices of imports, the same amount of income and wealth no longer can buy as many imports; people find that their purchasing power--or real income and wealth--has fallen. With less purchasing power, other things being equal, people will tend to buy less overall. The decline in purchases reduces absorption relative to output as imports also decline in response to the reduction in purchasing power. The opposite tends to occur abroad. Both the domestic and foreign changes in absorption relative to output help to reduce the domestic current-account deficit.

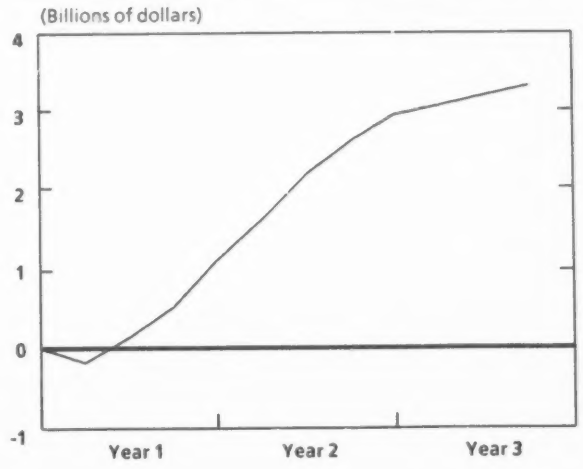
A real depreciation may also reduce absorption relative to production through another indirect channel involving the demand for money. If increases in the prices of imports and other tradeable goods resulting from depreciation causes the overall price level to rise and if the money supply does not increase proportionally, the real money supply will contract. This contraction causes interest rates to rise, and reduces interest-sensitive spending such as business investment and consumer demands for housing and durable goods. These spending reductions, if linked with a decline in imports, will bring about a decline in absorption relative to output.

A nominal depreciation, however, may work against itself if the price increases that it causes become sufficiently strong and widespread to prevent any depreciation in the real exchange rate from occurring. A nominal exchange-rate depreciation works to depreciate the real exchange rate (the one that matters most), but increases in domestic prices work to appreciate it. If the increases in domestic prices that the initial depreciation in the nominal rate brings about are too strong or widespread, they will offset the real effect of the initial depreciation.

For this reason, many economists believe that depreciations are most likely to be effective when they are accompanied by restrictive economic policies that can limit domestic price increases. As the next chapter will show, restrictive fiscal policy measures seem particularly attractive.

The J-Curve Effect. Depreciating the dollar may not, however, bring about an improvement in the current account for some time, and in fact may even temporarily worsen it, especially when the dollar depreciates rapidly. An initial worsening of the current account followed by its later improvement is called the J-curve effect, since a graph of the

Figure 6.
The J-Curve: Effect of a 1 Percent Dollar Depreciation on the Current-Account Balance[a]



SOURCE: Congressional Budget Office simulation of model described in Chapter III.

a. The graph depicts the change from the baseline of the current-account balance.

balance over time would resemble the letter 'J'--first down, then up--as illustrated in Figure 6.[6]

Although the current-account deficit is affected by both imports and exports, the J-curve derives largely from developments involving imports. After a depreciation of the dollar, it takes time for importers to change the volume of their purchases, but no time at all for many import prices measured in dollars to rise to reflect the depreciation. The immediate effect of the dollar depreciation thus may be to raise the total amount rather than lower it, and it may rise more than enough to offset whatever initial improvement occurs in the dollar value of exports. This situation continues until the current account improves, as importers begin to buy fewer goods and services and foreigners further increase their real purchases of U.S. exports.

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6. There is some disagreement about how important the J-curve is to U.S. trade. Unlike other countries, the United States can have many of its imports priced in its own currency. Oil is only one example. If all imports were contracted for in dollars, there could be no J-curve, at least in the very short run. For a discussion of other characterizations of the J-curve and its apparently minor role in the persistence of the trade deficit since early 1985, see Ellen E. Meade, "Exchange Rates, Adjustment, and the J-Curve," *Federal Reserve Bulletin* (October 1988), pp. 633-644.

CHAPTER II

WHAT MONETARY AND FISCAL POLICY CAN AND CANNOT DO TO IMPROVE THE CURRENT ACCOUNT

Countries can use monetary or fiscal policy in efforts to reduce their current-account deficits. Those policies have, however, quite different effects. Before exploring these effects, an explanation of the two policies is in order.

Monetary policy is the regulation of domestic money and credit, though the buying and selling of currencies on world exchange markets is also a monetary operation. The authority charged with the responsibility for conducting U.S. monetary policy is the Federal Reserve, which carries out decisions by its Board of Governors and the Federal Open Market Committee. Foreign exchange operations are conducted cooperatively by the Federal Reserve and the Treasury, even though the Treasury has formal responsibility for these operations. Fiscal policy, by contrast, entails regulating the federal budget through decisions about taxes and spending programs. It is carried out jointly by the President and the Congress.

Although monetary policy is well suited to regulating such domestic economic conditions as the short-run level of domestic economic activity or the price level, its permanent effects on the current-account deficit may be quite small in a system like the current one where exchange rates fluctuate. Fiscal policy has just the opposite properties: many economists believe that it is well suited to influencing the "external balance"--the net flow of exports and imports--but may have little or no lasting effect on output or prices. Ideally, then, monetary policy would be used to regulate domestic (internal) economic conditions such as output and inflation, while fiscal policy would help control external conditions such as the trade deficit.

HOW MONETARY POLICY AFFECTS DOMESTIC VARIABLES AND THE CURRENT-ACCOUNT DEFICIT

A stimulative monetary policy reduces interest rates and stimulates demand, the direct effect of which is to increase absorption. If unused productive capacity remains in the economy, the higher level of demand will raise output and incomes with relatively little effect on prices. If the economy is producing at or near capacity, however, increased demand is likely to result in a relatively strong increase in inflation and a relatively weak effect on output.

Even when unused productive capacity exists, not all of the new spending leads to an expansion of domestic output, because some of the new demand is for imports. Since monetary expansion is unlikely to affect exports much at first, the increased expenditure on imports initially worsens the current-account balance.

These relatively direct effects of the monetary stimulus in worsening the current-account balance are largely offset, however, by another set of reactions involving the exchange rate.[1] Both lower interest rates and a larger current-account deficit tend to depreciate the dollar. This depreciation reduces the current-account deficit by switching foreign and domestic expenditures toward U.S. products, thus increasing output relative to absorption. This switching effect roughly offsets the increase in the current-account deficit caused by the direct effects of monetary stimulus on demand.

A lower interest rate causes a depreciation, since it reduces the expected yields on dollar-denominated financial assets relative to those of comparable assets in other currencies. (The depreciation may create some expectation of a later appreciation, increasing the attractiveness of dollar-denominated assets and at least partially offsetting the effects of the interest-rate decline.) The relatively lower yields lead to shifts of funds away from dollar-denominated assets to assets denominated in foreign currencies; the act of selling dollar assets and buying foreign assets then puts downward pressure on the value of the dollar. The adjustment in exchange rates usually occurs quite quickly.

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1. When the economy is producing at or near capacity, the increase in inflation resulting from monetary stimulus would cause the dollar to depreciate less in real terms than in nominal terms. If inflation rises substantially, the dollar might even appreciate instead of depreciate in real terms.

Thus, the net effect of stimulative monetary policy on the current account is relatively small. Absorption increases relative to output as a direct reaction to the stimulative effect of the interest-rate decline, but this effect on the current-account balance is offset by expenditures switching in response to the depreciation of the dollar. The trade deficit remains roughly unchanged. These effects are illustrated with empirical results in Chapter III.

A restrictive monetary policy would, of course, have just the opposite effects: the interest rate would rise, and absorption would fall, leading to a decline in output and income. On the external side, this reduction in absorption would cause the current account to move toward surplus and, with the higher interest rate, the dollar would appreciate in value. After a time, though, the appreciation of the dollar would lower exports, raise absorption and imports relative to output, and begin to offset the initial improvement of the current account.

These two examples of monetary policy both show that its relative strength lies in its ability to affect domestic economic conditions--output and inflation--rather than the current-account balance. Because its effects on the current account--operating through income and exchange rates--are offsetting, monetary policy is not an efficient tool for dealing with external imbalances.

Austerity Policies

What would happen if, in spite of its relative ineffectiveness in affecting the external balance under flexible exchange rates, the Federal Reserve wanted to use monetary policy to move the current account from deficit to balance? Because a restrictive monetary policy action would only temporarily improve the current account, the Federal Reserve would have to repeat such actions over and over again, and thus pursue an increasingly restrictive path of monetary policy.[2] This approach would continually reduce both output and absorption, and would continually appreciate the exchange rate. The current-account deficit would remain smaller only as long as the direct impact of

2. Under the system of fixed-exchange rates that preceded the current system of flexible-exchange rates, monetary policy could improve the current account, since offsetting changes in exchange rates did not occur.

monetary restraint on absorption outpaced its effects on imports and exports operating through the exchange rate. With output continuing to fall, an improvement in the current-account balance would be maintained only at the cost of increasing domestic unemployment; that is, with flexible exchange rates, the cost of maintaining an improvement in the external balance would be a growing internal imbalance.

This situation illustrates a fundamental policy dilemma: a single policy tool cannot be counted on to achieve two targets. Only in the most exceptional cases can monetary policy acting alone achieve both internal and external balance. Targeting multiple goals with multiple policy tools will be discussed more fully in this chapter's section on policy coordination.

Exchange-Market Intervention

Governments often decide to try to stabilize the exchange rate at or near a particular value, and they turn to monetary policy to carry out this task by intervening in exchange markets. In other words, government authorities buy and sell currencies with the aim of influencing exchange rates.

There are several possible reasons for seeking exchange-rate stability. Policy authorities may feel that a given exchange value for the dollar is consistent with the desired current-account balance, even though market forces are pushing the rate toward a different value. If the rate is depreciating, the authorities may want to resist because depreciating the dollar would risk increasing domestic inflation. If the dollar is appreciating, the authorities may fear damaging the competitiveness of domestic export industries. In addition, the authorities are mindful that depreciation of the dollar imposes losses on foreigners, including foreign central banks, which may have large dollar holdings that they intend eventually to convert into other currencies.

If the intervention is meant to slow or stop depreciation of the dollar, the authorities would buy dollars, making them more scarce relative to other currencies in the market and therefore more valuable. They would buy dollars using some of their stocks of other major currencies, which would then make these currencies more plentiful and cheaper. Such intervention in exchange markets would help to

prevent the dollar from further depreciation, at least temporarily. Governments of other countries may also intervene to support the dollar. Similarly, governments of other countries can intervene to thwart any appreciation in the dollar by selling dollars.

Government authorities intervening in support of their own currency often do not have enough foreign currency on hand to offer in exchange for their own currency. When this happens, they commonly "swap" set amounts of domestic currency with foreign governments in exchange for foreign currencies. The swap temporarily gives the intervening government extra resources to conduct the intervention. Later, when exchange-rate stability is restored, the swap is reversed.

Sterilized and Unsterilized Intervention

The act of buying up dollars to make them scarcer has a direct domestic impact as well. Because the Federal Reserve purchases dollars with foreign exchange reserves--a component of the monetary base--it reduces the monetary base, and with it the domestic money supply. As a result, domestic interest rates rise. In fact, intervening to support the dollar is one way to carry out a restrictive monetary policy. But the Federal Reserve may not want to follow a restrictive monetary policy solely to stabilize the value of the dollar. It may have other policy goals in mind, such as providing enough money to permit total demand and output to expand at a particular rate. If the Federal Reserve fully dedicates its monetary policy to preventing the dollar from depreciating, such a restrictive policy would threaten the goal of noninflationary growth in domestic output and demand.

Consequently, the Federal Reserve often tries to "sterilize"--or offset--the effect on the domestic money supply of its intervention in exchange markets. Sterilized intervention involves buying or selling the domestic currency in the foreign exchange markets and then using other monetary operations to offset the impact of the transactions on the domestic money supply. For example, if the Federal Reserve buys dollars with foreign currencies from its reserve holdings to affect the dollar's exchange rate, it can sterilize the loss of foreign reserves by creating new domestic reserves to take their place.

The Federal Reserve creates these new domestic reserves by purchasing assets, typically government bonds, from the private sector, and paying for them by writing checks on itself. It then credits the reserve accounts of the banks that cash its checks, thereby increasing the reserves of the domestic banking system. In a similar fashion, the Federal Reserve can lower the banking system's reserves by selling bonds to the private sector. These maneuvers are called "open-market" operations.

If the Federal Reserve fully sterilizes its intervention in exchange markets, it will have no impact on the size of the domestic money supply. With no change in the money supply, the intervention in support of the dollar can be carried out for a while without dampening demand or raising interest rates at home.

Most analysts, however, believe that sterilized intervention does not significantly affect exchange rates. The reason is that, because currency values are quite insensitive to changing supplies of dollars or other currencies, large amounts of funds are often needed to bring about even a small change in exchange rates.

In contrast, unsterilized intervention may succeed in reaching exchange-rate targets because it brings about significant shifts of private funds from one currency to another, reinforcing the effects of the intervention itself. Because unsterilized intervention affects domestic interest rates, it can stimulate flows of private investment into or out of the country. These flows help bid the value of the dollar up or down and thus reinforce the effects of intervention. Unsterilized intervention to support the dollar, for example, restricts the U.S. money supply and raises interest rates. If rates in other countries do not rise as much, investors will move funds into the United States to take advantage of the higher rates. The increased demand for dollars among these investors will help bid up the dollar's value, helping to achieve the objective of the original intervention.

Unfortunately, however, changes in currency values brought about by unsterilized intervention are unlikely to alter the current-account deficit significantly. Unsterilized intervention, like the

domestic monetary policy operations discussed earlier in this chapter, achieves changes in exchange rates by altering domestic monetary conditions. These conditions themselves affect the current-account balance in ways that offset the effects of the exchange-rate change. For example, unsterilized intervention to depreciate the dollar in order to reduce the current-account deficit lowers domestic interest rates and thus increases domestic demand for goods and services, including imported ones. This increase in imports offsets at least some of the effect on the current account of the depreciation of the exchange rate that results directly from intervention.

HOW FISCAL POLICY AFFECTS THE CURRENT-ACCOUNT DEFICIT

As the last section on monetary policy pointed out, with flexible exchange rates, monetary policy has a limited ability to reduce a current-account deficit, since the effect of a restrictive monetary policy on the current-account deficit through income is offset by its effect through exchange rates. On the other hand, the strength of fiscal restraint is that it can permanently improve the current account because its effects through income and exchange rates reinforce each other.

Direct Effects of Fiscal Policy on the Gap Between Absorption and Output

Various types of fiscal policy tools are available to lower the absorption of resources by households, businesses, and governments. On the spending side of the federal budget, these tools include reducing federal purchases of goods and services, decreasing transfer payments such as Social Security benefits, or providing less grants-in-aid to states and local governments; on the revenue side, there are increases in taxes and tariffs. All of these deficit-reducing actions are likely to lower absorption relative to output, raise national saving, and improve the current account.

Indirect Effects of Fiscal Policy on the Gap Between Absorption and Output

Fiscal restraint usually can affect the level of absorption relative to output through another channel--depreciation of the exchange rate.[3] Reducing the federal deficit reduces domestic interest rates relative to those abroad unless monetary policy intervenes to prevent it.[4] This decline in interest rates, in turn, depreciates the dollar and improves the current account through its effects on absorption and the switching of expenditures.

Investment may increase in response to a cut in the budget deficit because of the likely decline in interest rates. Investment--especially in industries producing tradeable goods--may also expand in response to the induced depreciation of the exchange rate. Any increase in investment uses productive resources that might otherwise have gone directly into production of exports or import-substituting goods. Thus, it limits the improvement in net exports and the current account that can come about as a result of reducing the budget deficit. But this limiting effect is only temporary, since an increase in investment increases productive capacity and eventually helps to raise output relative to absorption.

Relative Effects of Different Fiscal Measures on the Current-Account Deficit

Different changes in the federal budget can have different impacts on the current account. The strongest impacts are likely to come when the federal government reduces its purchases of goods and services from abroad--for example, military imports from its allies in the North

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3. Fiscal restraint may not result in exchange-rate depreciation if it significantly reduces expectations of inflation or otherwise improves market sentiments regarding the future value of the dollar.

4. In fact, the response of interest rates to fiscal policy changes depends heavily on how domestic monetary policy is conducted. The central bank sometimes uses the level of short-term interest rates as a policy tool or "intermediate target" to bring about a desired change in a "final target" like GNP. In such a case, the central bank allows the interest rate to change only when it wants it to. At other times, the monetary authority instead uses the level of some monetary aggregate as a tool and thus allows interest rates to fluctuate with market forces. The discussion in this section draws on these issues by imagining that the monetary authority, if it is operating by controlling the interest rate, changes the rate in response to fiscal measures in just the same way that the rate would move under a regime of monetary-aggregate targets.

Atlantic Treaty Organization (NATO). Such an action lowers federal absorption dollar for dollar. The current-account balance improves because imports fall, and national saving rises because the federal deficit declines. In this example, the improvement in the current account equals the decline in public absorption, and the increase in national saving equals the decline in the federal deficit. Domestic output does not change.

Other deficit-reducing measures may ultimately reduce the gap between absorption and output--and thus the current-account deficit--by different amounts. The relative sizes of these effects are hard to predict, however, because they involve complicated direct and indirect effects. Reducing federal purchases of domestically-produced goods has the largest immediate effect on absorption, since it directly lowers the absorption of output dollar for dollar. Its ultimate impact on the current account depends on the extent to which the secondary impacts on income, prices, interest rates, and exchange rates affect domestic spending on imports and foreign spending on U.S. exports. Other budgetary measures, such as reducing benefit payments to the elderly or increasing taxes, have no effect on public absorption, and they directly reduce private absorption by less than dollar for dollar.[5] Their ultimate effect on private absorption and the current account depends not only on "multiplier" effects, but also on how real exchange rates respond. Some offsetting increases in absorption may occur if the budget deficit reductions cause interest rates to fall, thereby stimulating private spending that is sensitive to such financial conditions. All in all, predicting what types of program changes will reduce absorption and the current-account deficit most will depend on many behavioral responses. Some empirical findings are presented in Chapter III.

Tariffs and Other Trade Policy Measures

Policymakers often propose tariffs or import quotas as a means of countering unfair foreign trade practices that affect the competitive positions of individual U.S. industries. While such trade measures can be effective in reaching these goals, they are less likely to succeed in

5. General consumption taxes are more likely to reduce consumer imports than are income taxes, because they penalize absorption and encourage saving.

changing the overall trade balance, and may bring about retaliation from abroad.

Several considerations may make tariffs and quotas less effective than broader policy actions as a means of reducing a current-account deficit. To be effective in reducing imports, fiscal measures need to reduce overall absorption relative to output, and thus need to be more broadly based than selective trade policy provisions. The reason is that selective measures can be circumvented by substituting unrestricted imports for restricted ones. A related problem with trade policy provisions is that, when they are applied broadly enough to affect import prices generally, they focus domestic demand on domestic goods and can cause competition for labor and capital that could raise the prices of all domestically produced goods, including exports. The potential rise in export prices could cause the real exchange rate to appreciate and could offset some of the reduction in the current-account deficit that would otherwise be caused by an increase in trade restrictions. In any case, many analysts worry that trade measures will cause foreign countries to retaliate, bringing about a trade war that serves no good purpose.

COORDINATING POLICY ACTIONS

The previous two sections described how fiscal and monetary policies operate in isolation in efforts to achieve the macroeconomic goal of a smaller current-account deficit. This section examines how fiscal and monetary policy actions can be coordinated both within the United States and between the United States and other countries to reach internal as well as external policy targets.

Domestic Policy Coordination

To achieve the dual targets of a desired level of overall domestic output and a smaller current-account deficit, policymakers need to use both fiscal and monetary policy. No single policy tool is sufficient to ensure both internal balance--full use of domestic resources without rising inflation--and external (current-account) balance. The advantage of fiscal policy over monetary policy in altering the current account leads to what economists call correct policy assignment: giving fiscal policy

the goal of working toward external balance and giving monetary policy the goal of providing for noninflationary growth in domestic output. By agreeing to coordinate their policy actions in this manner, fiscal and monetary authorities can be more confident that both targets are met.[6]

International Policy Coordination

Many analysts have suggested that the United States and other countries should coordinate their economic policies to speed up the process of reducing current-account imbalances, and indeed some coordination of monetary policies has already been achieved.[7] The likelihood of success with such efforts is mixed. International coordination of monetary policies will probably not succeed because monetary policies are relatively ineffective in affecting trade flows. Coordinating fiscal policies seems certain to help rather than harm U.S. efforts to control the external deficit, but other countries will not necessarily be willing to coordinate actively with U.S. efforts.

Coordinating International Monetary Policy

Under the Plaza Accord of 1985, the United States and other industrial countries coordinated monetary policies in the hope of improving current-account imbalances. The process of monetary coordination involves exchange-market intervention designed to influence the levels of exchange rates. When such actions are not sterilized, they reduce interest rates in the United States relative, say, to those in Japan, and decrease the net flow of capital from Japan to the United States, causing the dollar to depreciate. This depreciation, in turn, is intended to reduce the U.S. current-account deficit.

Such coordinated changes in monetary policy are apt to result in relatively small reductions in current-account imbalances, if only

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6. For a discussion of this issue in the context of an open economy, see Robert A. Mundell, "Flexible Exchange Rates and Employment Policy," *Canadian Journal of Economics and Political Science*, vol. 29 (November 1961), pp. 509-517.

7. See, for example, comments by then Treasury Secretary James Baker reported in "International Coordination: A Fragile Process," *Washington Post*, January 24, 1988, p. F.1.

because combined monetary changes in different countries suffer from the same drawbacks as do changes in domestic monetary policy. As an earlier discussion pointed out, monetary policy by itself is likely to have little overall effect on the current account. While it may cause exchange rates to move in the desired direction, it also produces changes in domestic incomes that offset much, if not all, of the effects of changes in exchange rates on trade.

Coordinating International Fiscal Policy. Recent discussion of international policy coordination has involved suggestions that other countries stimulate their absorption and therefore their demand for U.S. exports through expansionary fiscal policies, while the United States does the opposite. Supporters of such an approach argue that no one country would be forced to bear the entire burden of external economic adjustment. Moreover, coordinated policies would be likely to restore external balance faster and with less severe economic consequences in the United States than when domestic and foreign policies are in conflict. Proponents of coordination point out further that the fiscal policies of U.S. trading partners in the early 1980s may have contributed to the emergence of the large U.S. current-account deficit during that period. After 1981, restrictive policies were being followed by several major trading partners, especially West Germany and Japan, at the same time that the U.S. budget deficit rose sharply.

While coordinating fiscal policies among countries could speed up the reduction of the U.S. external deficit, the process could affect domestic economic conditions in other countries in ways that might make such stimulation undesirable from their point of view. For example, many foreign industrial countries are now facing inflationary pressures that could well be exacerbated by stimulus designed to realign their current-account imbalances with the United States. Other countries also have long-run concerns leading them to reduce rather than increase budget deficits. For example, the populations of Japan and other industrial countries are aging rapidly, raising the prospect of sharp increases in the ratio of dependent retired persons to productive working people. Policymakers are responding to this outlook by reducing budget deficits in order to increase saving and invest-

ment, and therefore the amount of production and income that will be available to support the large retired population.[8]

In any case, further quantitative analysis is needed to find out how important policy coordination would be in reducing the U.S. current-account deficit. Chapter III provides estimates that suggest that any contribution may be only a moderate one.

8. These concerns are similar to those now being expressed in the United States. For a discussion of the role of deficit reduction in providing for the large retired population expected in the United States in the next century, see Congressional Budget Office, *The Economic and Budget Outlook: Fiscal Years 1990-1994* (February 1989), pp. 79-99.

CHAPTER III

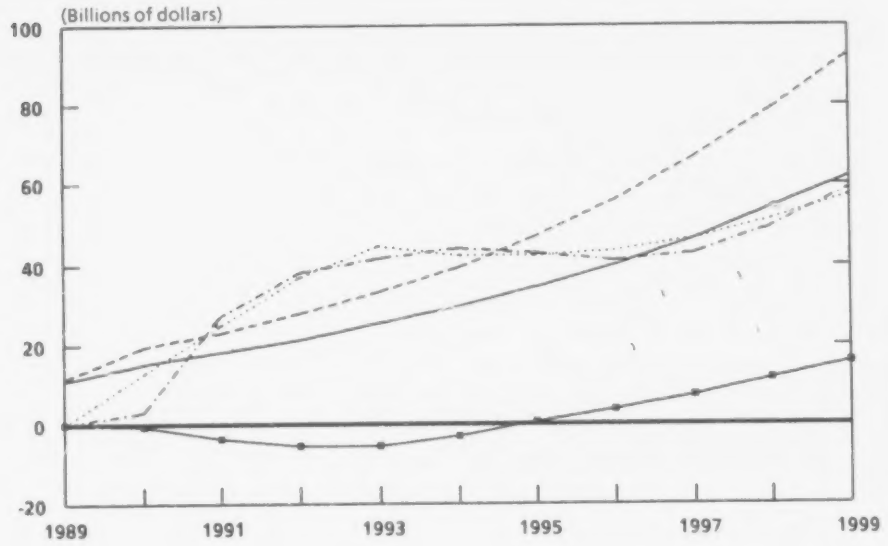
THE QUANTITATIVE EFFECTS OF MONETARY AND FISCAL POLICY ON THE CURRENT ACCOUNT

Economic policy can change the current-account deficit, as the preceding chapters have shown. The question is, by how much? This chapter attempts to answer that question by presenting results from Congressional Budget Office simulations and other economic models. It assesses how much various monetary and fiscal actions are apt to change the trade deficit, and how policy coordination with other countries can alter this effect. The chapter also provides estimates of the changes in other economic variables--such as GNP, prices, and interest and exchange rates--that are likely to accompany these policy actions.

CBO conducted a total of eight simulations for this study. These simulations involved the following experiments: (1) a reduction in federal purchases equal to 1 percent of GNP; (2) the same reduction in federal purchases, but with nominal exchange rates held at their baseline values; (3) a reduction in federal purchases sufficient to meet the Balanced Budget Act targets; (4) an increase in the money supply sufficient to reduce interest rates by the same amount that would result from a reduction in federal purchases sufficient to meet the Balanced Budget Act targets; (5) a coordination of fiscal and monetary policy involving a reduction in federal purchases of 1 percent of GNP and a 4 percent increase in the domestic money supply; (6) this same fiscal and monetary policy combination coupled with stimulative foreign fiscal and monetary policies achieved by increasing foreign government purchases by 1 percent of foreign GNP and raising the foreign money supply by 4 percent; (7) a repetition of this simulation, but with the newly industrialized countries not participating in the foreign stimulus; and (8) depreciation of the dollar sufficient to achieve the same improvement in the current-account deficit as would result from meeting the Balanced Budget Act targets.

The results of CBO's simulations are summarized in Figures 7 through 10. Figures 7 through 10 do not, however, include the results from the second, fifth, and seventh of these simulations. Those results are reported in Appendix Tables B-2, B-5, and B-7, respectively.

Figure 7.
U.S. Current-Account Balance in CBO Simulations
(Difference from baseline in billions of dollars)



SOURCE: Congressional Budget Office.

NOTE: CBO's simulations are indicated in the figure as:

——— Budget Deficit Reduction achieved by lowering federal purchases by 1 percent of GNP.

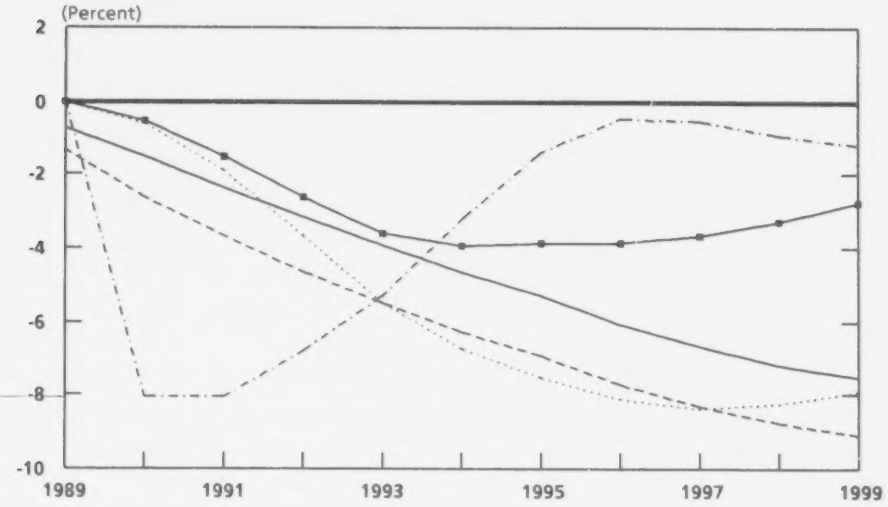
..... Balanced Budget Act Deficit Reduction achieved by reducing federal purchases to meet the Balanced Budget Act targets.

———● Expansionary Monetary Policy with the same interest-rate effect as the Balanced Budget Act simulation.

- - - - - International Policy Coordination achieved by the combination of a reduction in U.S. federal purchases amounting to 1 percent of GNP, a 4 percent increase in the U.S. money supply, an increase in foreign government purchases equal to 1 percent of foreign GNP, and a 4 percent increase in the foreign money supply.

-·-·-·- Autonomous Dollar Depreciation resulting from a nonpolicy-related decline in the willingness of foreign investors to hold U.S. dollars, and sufficient to improve the current-account deficit by the same amount that would be realized by reducing federal purchases to meet the Balanced Budget Act targets.

Figure 8.
Real Exchange Rate of the Dollar in CBO Simulations
(Percentage difference from baseline)



SOURCE: Congressional Budget Office.

NOTE: CBO's simulations are indicated in the figure as:

——— Budget Deficit Reduction achieved by lowering federal purchases by 1 percent of GNP.

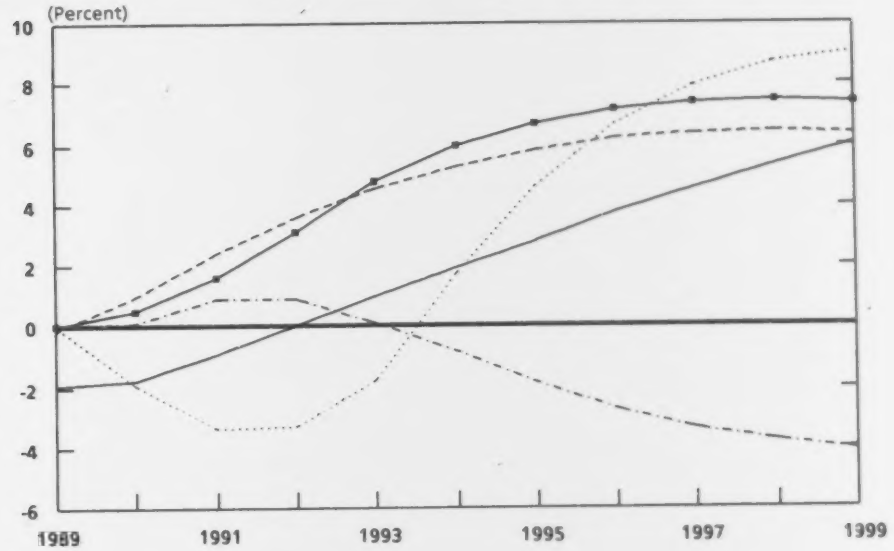
····· Balanced Budget Act Deficit Reduction achieved by reducing federal purchases to meet the Balanced Budget Act targets.

———● Expansionary Monetary Policy with the same interest-rate effect as the Balanced Budget Act simulation.

– – – – – International Policy Coordination achieved by the combination of a reduction in U.S. federal purchases amounting to 1 percent of GNP, a 4 percent increase in the U.S. money supply, an increase in foreign government purchases equal to 1 percent of foreign GNP, and a 4 percent increase in the foreign money supply.

–·–·–·– Autonomous Dollar Depreciation resulting from a nonpolicy-related decline in the willingness of foreign investors to hold U.S. dollars, and sufficient to improve the current-account deficit by the same amount that would be realized by reducing federal purchases to meet the Balanced Budget Act targets.

Figure 9.
U.S. Domestic Investment in CBO Simulations
(Percentage difference from baseline)



SOURCE: Congressional Budget Office.

NOTE: CBO's simulations are indicated in the figure as:

——— Budget Deficit Reduction achieved by lowering federal purchases by 1 percent of GNP.

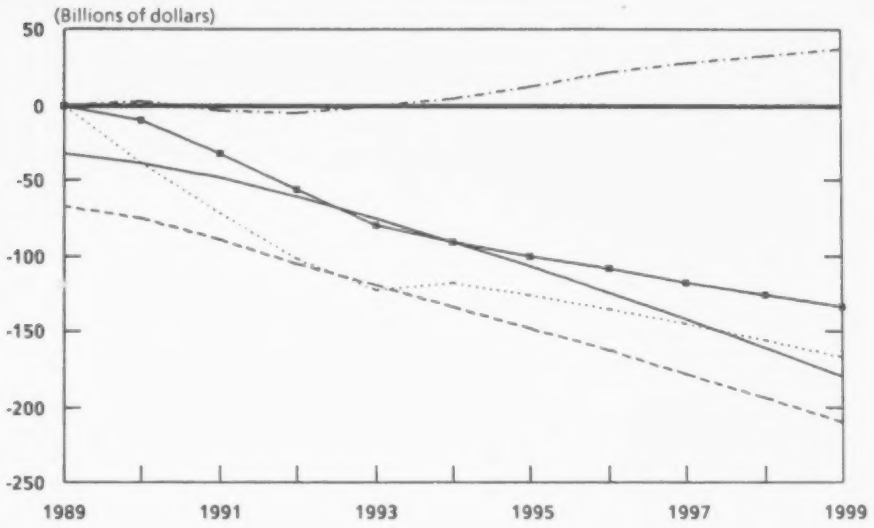
..... Balanced Budget Act Deficit Reduction achieved by reducing federal purchases to meet the Balanced Budget Act targets.

———■——— Expansionary Monetary Policy with the same interest-rate effect as the Balanced Budget Act simulation.

- - - - - International Policy Coordination achieved by the combination of a reduction in U.S. federal purchases amounting to 1 percent of GNP, a 4 percent increase in the U.S. money supply, an increase in foreign government purchases equal to 1 percent of foreign GNP, and a 4 percent increase in the foreign money supply.

—·—·— Autonomous Dollar Depreciation resulting from a nonpolicy-related decline in the willingness of foreign investors to hold U.S. dollars, and sufficient to improve the current-account deficit by the same amount that would be realized by reducing federal purchases to meet the Balanced Budget Act targets.

Figure 10.
Federal Budget Deficit in CBO Simulations
(Difference from baseline in billions of dollars)



SOURCE: Congressional Budget Office.

NOTE: CBO's simulations are indicated in the figure as:

——— Budget Deficit Reduction achieved by lowering federal purchases by 1 percent of GNP.

····· Balanced Budget Act Deficit Reduction achieved by reducing federal purchases to meet the Balanced Budget Act targets.

—●— Expansionary Monetary Policy with the same interest-rate effect as the Balanced Budget Act simulation.

– – – – International Policy Coordination achieved by the combination of a reduction in U.S. federal purchases amounting to 1 percent of GNP, a 4 percent increase in the U.S. money supply, an increase in foreign government purchases equal to 1 percent of foreign GNP, and a 4 percent increase in the foreign money supply.

–·–·– Autonomous Dollar Depreciation resulting from a nonpolicy-related decline in the willingness of foreign investors to hold U.S. dollars, and sufficient to improve the current-account deficit by the same amount that would be realized by reducing federal purchases to meet the Balanced Budget Act targets.

The simulations imply reaches six overall conclusions:

- Reducing the budget deficit in a manner consistent with the Balanced Budget Act targets would reduce the current-account deficit after a few years by more than $40 billion from its projected baseline levels, which drop from $132 billion to $75 billion over the 1989-1994 period. In 1994, the current account improves by roughly 35 percent of the drop in the budget deficit. Simulation results from other studies indicate a greater improvement in the current account--amounting to about $65 billion or 55 percent of the drop in the budget deficit.

- Monetary policy actions to change interest rates have little lasting effect on the current-account deficit.

- If a sustained reduction in the budget deficit were coordinated with an expansionary U.S. monetary policy, the effect on the current account would be about the same as it is without the monetary change.

- Foreign fiscal and monetary stimulus undertaken in concert with U.S. monetary stimulus and fiscal restraint--sometimes called "international policy coordination"--could magnify the reduction in the U.S. current-account deficit resulting from policy action in the United States alone. The effect would be moderate, however, and would endure largely because of higher prices abroad.

- To reduce the current-account deficit, the United States has at times relied on dollar depreciation brought about by changes in market sentiments rather than by specific monetary or fiscal policy actions. Under this more passive approach, an abrupt real dollar depreciation of roughly 5 percent to 8 percent (in addition to the depreciation already projected by CBO) would be needed for a few years to produce the same reduction in the current-account deficit that would most likely come about from meeting the Balanced Budget Act targets. Relying on dollar depreciation resulting solely from a change in market sentiments eventually would

enlarge the budget deficit, since higher interest rates would raise federal net interest payments.

- In addition to their impacts on the current-account deficit, the policy actions considered here also affect general economic conditions in both the United States and the rest of the world. Budget deficit reductions in the United States, for example, could initially slow GNP growth both in the United States and abroad. In later years, however, since investment is greater, they appear to increase GNP noticeably worldwide relative to what it would have been.

BASELINE ESTIMATES OF THE BUDGET DEFICIT AND THE CURRENT-ACCOUNT DEFICIT

Without further policy actions, how much are the budget deficit and current-account deficit likely to change? CBO's January 1989 baseline projection shows that, under current budgetary provisions, the budget deficit will decline gradually from $155 billion in fiscal year 1988 to $122 billion in fiscal year 1994 (see Table 3). These projections do not take into account further actions the Congress might undertake to meet the targets in the Balanced Budget Act. (For the 1989-1993 period, the Balanced Budget Act targets are: $136 billion, $100 billion, $64 billion, $28 billion, and a balanced budget, respectively.) The corresponding baseline projection of the current-account balance also gradually declines, from a deficit of $132 billion in 1988 to one of $75 billion in 1994.

Underlying these projections are assumptions that interest rates will decline relatively slowly from levels prevailing at the end of 1988, and that the exchange rate of the dollar--measured against the currencies of 10 major industrial countries--will depreciate gradually in nominal terms at an average rate of 2.9 percent a year between 1989 and 1994. Because inflation rates abroad are expected to be only slightly below those in the United States--which are projected to average 4.6 percent a year over the next six years--this exchange-rate projection represents a real depreciation of the dollar, on average, of

TABLE 3. BASELINE BUDGET AND ECONOMIC PROJECTIONS
(By calendar year)

	Actual 1988	Projected 1989	1990	1991	1992	1993	1994
Current Account Deficit (Billions of dollars)	132	129	126	119	108	93	75
Budget Deficit (Fiscal years)	155	155	141	140	135	129	122
Three-Month Treasury Bill (Percent)	6.7	7.9	7.1	6.7	6.4	6.1	5.9
Ten-Year Government Bond Rate (Percent)	8.9	9.3	9.0	8.6	8.1	7.7	7.4
Dollar Exchange Rate (Percent change)	-4.3	-4.1	-3.0	-2.7	-2.5	-2.5	-2.5
Nominal GNP (Billions of dollars)	4,859	5,209	5,542	5,902	6,281	6,685	7,117
Real GNP (Percent change)	3.8	2.9	2.1	2.2	2.2	2.3	2.3
Consumer Price Index (Percent change)	4.0	4.9	4.9	4.6	4.4	4.4	4.4

SOURCE: Congressional Budget Office, *The Economic and Budget Outlook, Fiscal Years 1990-1994* (January 1989).

NOTE: The current-account and exchange-rate projections are not official CBO projections, but are staff estimates thought to be consistent with CBO economic projections. The numbers for 1988 do not reflect revisions in the data released after January 1989.

roughly 2.7 percent a year. Real GNP is projected to grow at 2.9 percent in 1989, but at a slower rate of 2.1 percent to 2.3 percent for the balance of the projection period.[1]

Under these assumptions, the external debt continues to increase, but the projected rate of increase slows dramatically over the projec-

1. CBO's August 1989 baseline projections of the current-account deficit are likely to be larger in 1990 and 1991 than those described here because of the strong appreciation of the dollar in early 1989. This appreciation was unforeseen when the January projection was prepared. For a detailed discussion of the January economic and budget projections, see Congressional Budget Office, *The Economic and Budget Outlook: Fiscal Years 1990-1994* (January 1989).

tion period. By 1994, the growth in privately held U.S. external debt in the baseline projection roughly equals that of nominal GNP in the rest of the world, when both are measured in dollars.

Because CBO has not made economic and budget projections beyond 1994, the simulations extending through 1999 require a set of baseline economic and budget numbers developed only for these simulations. In no respect do these "extended" projections represent a CBO forecast of future developments. They simply provide CBO with a plausible baseline to use in measuring the changes in the current account and other variables resulting from alternative policy actions.

Although the baseline simulation projections beyond 1994 are intended only as a benchmark for the simulations in this study, the characteristics of these extended projections are similar in several respects to the projections for the period through 1994 shown in Table 3. In particular, after 1994, CBO assumes that real GNP growth remains at roughly 2.3 percent a year, while the inflation rate ranges between 4.0 percent and 4.5 percent. At the same time, interest rates and exchange rates are assumed to remain stable. Finally, the budget deficit is kept constant as a share of GNP, and the current-account deficit is assumed to keep the external debt constant relative to GNP.

HOW EFFECTIVE IS BUDGET DEFICIT REDUCTION IN LOWERING THE CURRENT-ACCOUNT DEFICIT?

As the analysis in Chapter II indicates, reducing the budget deficit would cut the current-account deficit below the baseline levels in two ways. One way is by reducing demand or absorption by the federal government and the private sector (the federal government affects private-sector demands through taxes and transfer payments such as benefits from Social Security and Aid to Families with Dependent Children). The other way is by inducing a depreciation in the exchange rate. The short-term reduction in the current-account deficit, however, could be offset if domestic investment increased in response to a decline in interest rates caused by fiscal contraction. Theory alone cannot predict the strength of the offset from investment. Nor does theory determine whether the reduction in the current account resulting from fiscal restraint comes mainly from the direct effects of

deficit reduction on demands by the federal government and other entities, or from the dollar depreciation that results.

Reducing the deficit also has other economic effects, which help to explain its effect on the current account. Virtually all the economic models surveyed in this chapter suggest that, during the first few years, deficit reduction could slow the growth of GNP in the United States and also could reduce interest and inflation rates. In later years, however, deficit reduction could increase growth in GNP. GNP could grow faster because deficit reduction increases investment, which in turn increases the productive capacity of the economy. Moreover, deficit reduction lowers borrowing from abroad, which reduces the amount of income that is generated in the United States but flows to foreigners.

Reducing the U.S. budget deficit could have similar effects on foreign economies. During the first few years, foreign economic growth could slow down, since tighter U.S. fiscal policy and the resulting appreciation of foreign currencies would reduce U.S. demand for foreign exports. In later years, however, lower world interest rates stemming from reduced U.S. budget deficits could stimulate investment and economic growth in foreign countries, as lower interest rates do in the United States.

The simulations are based on budget deficit reductions resulting from reductions in federal spending, and, in particular, from decreases in federal purchases of goods and services. "Feedback effects," however, complicate quantitative comparisons of federal spending reductions and the resulting declines in the budget deficit. These effects often mean that the change in the budget deficit differs noticeably from the spending reduction that causes it. Initially, the budget deficit is likely to decline by less than the reduction in federal spending, because a cut in federal spending will reduce GNP and, with it, tax receipts. In later years, however, the reduction in the budget deficit may be larger than the underlying cut in federal spending, since deficit reduction increases rather than reduces GNP in the longer term. Moreover, the fall in federal debt and interest rates that deficit reduction brings about can reduce the deficit by larger and larger amounts as time goes on.

Finally, simulation results are sensitive to the state of economic conditions attuned to prevail throughout the simulation period. In 1989, the U.S. economy and the economies of many foreign countries are operating close to their current potential. Thus, simulations of stimulative monetary policy actions are apt to show more inflation, less real dollar depreciation, and less additional real growth than the same simulations would indicate under weaker economic conditions. Similarly, restrictive fiscal actions are more likely to have larger effects on prices and financial variables and less impact on real growth than would be the case if capacity utilization were lower.

According to the CBO and other model simulations described below, a sustained reduction in federal spending equal to 1 percent of GNP--an amount that, based on CBO baseline projections of GNP, rises from roughly $52 billion in 1989 to $71 billion in 1994--would correspond to budget deficit reductions climbing from roughly $33 billion to $91 billion if all feedback effects from the economy to taxes and spending are taken into account. The current-account deficit would decline by somewhere between $29 billion and $43 billion by 1994, or between 32 percent and 47 percent as much as the 1994 reduction in the budget deficit. The fiscal restraint described in the Balanced Budget Act would have an even greater effect. In general, these simulations show that reductions in the budget deficit initially lower real GNP, prices, interest rates, and real exchange rates.

Because domestic investment responds more strongly in the CBO simulations than in other published results, the increase in net exports and the reduction in the current-account deficit in the CBO simulations are at the lower end of this range. However, the ratio of current-account deficit reduction to budget deficit reduction rises from year to year in the CBO simulations, and is still rising at the end of the simulation period. This path implies that these simulations probably understate the reduction in the current-account deficit that may occur in the longer run.

Findings of Other Studies

According to a recent study by the International Monetary Fund of the effects of an increase in government spending, a reduction in U.S. government purchases amounting to 1 percent of GNP during the

1988-1995 period would cut the current-account deficit by amounts of 0.2 percent of nominal GNP in 1988, 0.5 percent in 1993, and 0.7 percent in 1995.[2] Based on the CBO baseline projection of nominal GNP, these figures suggest that a spending reduction rising from $52 billion to $71 billion during the 1989-1994 period would result in a reduction in the current-account deficit of from $10 billion to $43 billion, in terms of the CBO baseline GNP projections.

A recent study by the Brookings Institution incorporating simulations of a number of world models indicates that a reduction in government spending of the same size would reduce the current-account deficit by roughly $12 billion in 1989 and $32 billion in 1994, when the estimates are adjusted to reflect the CBO baseline estimate of nominal GNP.[3]

In a recent study based on simulations with a number of world econometric models, the staff of the Federal Reserve Board reports that a reduction in federal spending equal to 1 percent of GNP would reduce the current-account deficit by 0.2 percent of GNP initially, and by 0.5 percent at the end of the six-year simulation period. In dollar terms, the CBO projections for GNP indicate that these declines in the current-account deficit amount to roughly $10 billion in 1989 and $36 billion in 1994.[4]

The Federal Reserve study also reports that phased-in deficit reductions roughly equivalent to those mandated by the Balanced Budget Act, if initiated in 1989, would reduce over time the current-account deficit by even more (roughly $64 billion in 1994, using CBO's projection for GNP as a benchmark).

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2. See Paul Masson, Steven Symansky, Richard Haas, and Michael Dooley, "Multimod: A Multi-Region Econometric Model," in *Staff Studies for the World Economic Outlook* (Washington, D.C.: International Monetary Fund, 1988), pp. 50-104.

3. See Ralph C. Bryant, Dale W. Henderson, Gerald Holtham, Peter Hooper, and Steven A. Symansky, eds., *Empirical Macroeconomics for Interdependent Economies* (Washington, D.C.: The Brookings Institution, 1988). The size of the effect on the budget deficit differs from that of the reduction in government spending because of feedback effects.

4. Ralph C. Bryant, John Heliwell, and Peter Hooper, "Domestic and Cross-Border Consequences of U.S. Macroeconomic Policies," Board of Governors of the Federal Reserve System, International Finance Discussion Paper No. 344 (March 1989). This study was originally carried out under the auspices of the Brookings Institution.

Although the Federal Reserve Board study focuses primarily on the effects of reducing the budget deficit by cutting federal purchases of goods and services, it also examines the effects of other types of spending and tax changes, each amounting to 1 percent of GNP. In particular, the study considers the effects of changing federal purchases, federal transfer payments, individual income tax rates, corporate tax rates, and sales tax rates.

All of these measures reduce the current-account deficit throughout the simulation period. For most years, a reduction in transfers to individuals would produce the largest cut in the current-account deficit, amounting to 0.5 percent of GNP by the end of the simulation period. An increase in sales taxes brings about the smallest improvement (0.26 percent of GNP). A reduction in government purchases is less effective than a reduction in transfers or an increase in personal income taxes, since purchases result in less real dollar depreciation. Its effect on the current account is an eventual improvement of 0.36 percent of GNP.

Results of CBO's Simulations

CBO performed three alternative policy simulations to estimate the effects of budget deficit reductions on the balance of payments. In the first simulation, federal government purchases of goods and services are permanently cut from baseline levels by 1 percent of GNP in the fourth quarter of 1988. This cut permanently reduces the level of real total government expenditures by slightly more than 5 percent. The reduction amounts to $52 billion in 1989, growing to $71 billion in 1994. Taking feedback effects into account, the corresponding reductions in the budget deficit are $33 billion in 1989 and $91 billion in 1994.

Since the current account can be affected either by a decline in absorption (spending) relative to output as a result of budget deficit reduction or by the dollar depreciation induced by budget deficit reduction, CBO separated these effects by performing a second simulation with the same budget reduction but with exchange rates held fixed at their baseline values. A third simulation reduced federal purchases by enough to achieve the budget deficit targets in the Balanced Budget Act and a constant spending-to-output ratio after 1993.

Budget Deficit Reduction. An initial $52 billion cut in federal purchases in CBO's simulation yields a gradual reduction in the current-account deficit, amounting to $18 billion in 1991 and $29 billion by 1994. The reduction in the current-account deficit amounts to 0.4 percent of GNP in 1994. A further reduction takes place in later years, reaching 0.6 percent of GNP by 1999. In part, this improvement occurs because the dollar depreciates 7.5 percent in real terms by 1999 relative to the baseline discussed above. This 7.5 percent real depreciation reflects a 5.9 percent nominal decline augmented by the net effect of a 4.5 percent decline in U.S. prices relative to the baseline and a 2.8 percent decline in foreign prices relative to their baseline levels. In this simulation, the level of real investment is 2.8 percent above its 1995 baseline, or one-half a percentage point higher relative to GNP. Without this rise in investment, the improvement in the current-account deficit would be about twice as large.

Reducing government spending lowers GNP growth, inflation rates, and interest rates in the short run, not only in the United States but also abroad (see Appendix Table B-1 for details). All of these changes come about because of reduced demand by the government and by those whose incomes are affected by the government's reduced purchases, and because of increased demand for U.S. exports by the rest of the world.

Fiscal Restraint with Fixed Exchange Rates. An improvement in the current account resulting from fiscal restraint can be attributed either to the direct depressing effects of fiscal restraint on domestic demands or to the depreciation in the exchange rate that fiscal restraint brings about. To separate these effects, CBO repeated the preceding simulation but held the nominal exchange rate fixed at its baseline values. The results from this simulation can be viewed as arising from the direct effect of budget deficit reduction on aggregate demand, while the differences between the results of this simulation and the previous one arise from changes in exchange rates that stem from fiscal restraint.

In the simulation just described, holding nominal exchange rates constant yields two significant differences in effects. First, the reduction in the current-account deficit is $14 billion less by 1994, and $50 billion less by 1999. This smaller reduction reflects less depreciation of real exchange rates. (Even though nominal exchange rates are held fixed, the simulation includes some real depreciation effects since,

relative to the baseline, U.S. prices fall more than foreign prices.) Second, holding nominal exchange rates constant brings about a larger increase in domestic investment (7.5 percent relative to baseline by 1999, compared with 6.1 percent in the previous exercise). This increase occurs because domestic interest rates decline more sharply.

The Balanced Budget Act. A third CBO simulation imposes deficit reductions that approximately meet the Balanced Budget Act targets through 1993. According to CBO baseline estimates, these required reductions that amount to roughly $41 billion in 1990 and rise to $129 billion in 1993. In this simulation, the current-account deficit falls by $45 billion by 1993 and $57 billion by 1999, amounting to an improvement in the current-account deficit equal to 0.7 percent of GNP. There is a 6.7 percent real depreciation of the dollar from baseline levels by 1994, and a 7.9 percent real depreciation from the baseline levels by 1999 (see Figure 8). Real domestic investment rises by 9.0 percent relative to its 1999 baseline level, compared with an increase of 6.1 percent by 1999 with constant budget deficit reduction (see Figure 9).

Because the deficit reductions mandated by the Balanced Budget Act targets are larger after the first year than the cuts equal to 1 percent of GNP considered in the two preceding CBO simulations, the economic effects are larger as well. GNP growth, inflation, and the long-term interest rate are reduced more sharply in the short term in both the United States and the rest of the world after the first two years than they are in the two previous simulations. The longer-term increases in U.S. GNP are also larger than before. This improvement is the result of the benefits of deficit reduction--greater savings and productive capacity, and reduced indebtedness to the rest of the world. In general, the economic effects in the rest of the world are similar to those in the United States, but smaller (details are presented in Appendix B, Table B-3).

HOW IMPORTANT IS MONETARY POLICY IN CHANGING THE CURRENT-ACCOUNT DEFICIT?

The theory outlined in Chapter II suggests that monetary policy efforts, in contrast to fiscal policy, will not have much lasting effect on the current account. The effects on the current-account deficit of mone-

tary actions working through domestic demand and those working through the exchange rate eventually tend to cancel each other. This section presents simulation results to lend quantitative support to this theory.

In most economic models, U.S. monetary policy actions to reduce interest rates push up U.S. inflation rates for two reasons: because they increase demand for goods and services, and because they cause the exchange rate to depreciate. GNP growth may initially increase, but the impact of monetary stimulation on real GNP in most models eventually disappears. Changes in U.S. monetary policy initially have relatively slight effects on real foreign GNP, because U.S. demand for other countries' exports does not significantly change in the short run. U.S. monetary expansion, however, can reduce foreign inflation rates, because exchange rates in other countries appreciate as the dollar declines in value. After a few years, lower real foreign interest rates can increase foreign GNP, since they stimulate investment and thereby increase productive capacity in other countries.

Findings of Other Studies

Recent studies by the International Monetary Fund (IMF), the Brookings Institution, and the Federal Reserve Board, cited earlier, report negligible effects of monetary expansion on the current account. In the IMF study, the effect on the current account of raising the money stock by 5 percent above baseline is minimal--a slight worsening that represents, on average, about 0.1 percent of GNP, or $5 billion to $7 billion in terms of the CBO baseline projection of GNP. Gross private investment is higher for a few years, by about 0.3 percent of GNP, but then falls slightly below baseline levels by the end of the simulation. Other economic effects of the policy change primarily affected the price level, which increases nearly 6 percent above its baseline level after six years. The policy changes have relatively small long-term effects on real GNP, interest rates, and the real exchange rate.

In the Brookings study, the effect on the current account of a 4 percent increase in the monetary stock is essentially zero, on average, during the six-year simulation period, reflecting the offsetting effects of higher income and dollar depreciation. The models in the Brookings analysis that show more reduction in the current-account deficit tend

to be those that include more dollar depreciation. On average, the simulations suggest that real GNP and the real exchange rate are slightly higher after six years, while interest rates and the price level would be significantly higher.

The Federal Reserve study reports the same general findings. Initially, a 1 percent increase in the money stock increases the current-account deficit by 0.04 percent of GNP, or roughly $2 billion in terms of the CBO baseline projection of GNP. During the third through the sixth year, the current-account deficit falls by 0.02 percent of GNP, or roughly $1 billion, on average, between 1991 and 1994. Effects on other economic variables in this simulation are similar to those in other studies. The long-term effects on real GNP and the real exchange rate are quite small, while the price level is noticeably higher than its baseline level.

Results of CBO's Simulation

CBO also found that changes in monetary policy result in relatively small changes in the current-account deficit. To permit a relatively precise comparison between monetary and fiscal policy changes, CBO simulated a change in monetary policy that results in exactly the same interest-rate reductions from baseline levels that had occurred in simulating the deficit reductions needed to meet the Balanced Budget Act targets described above. In this way, one can judge the significance of the changes in the current account brought about by monetary expansion by comparing them with those stemming from budget deficit reductions. According to this simulation, a monetary expansion sufficient to obtain the same interest-rate path worsens the current-account balance by as much as $6 billion in 1993. The current-account balance improves slowly after that, however, and improves by $16 billion relative to its baseline level after 10 years.

In contrast to the improvement in the current account that results from reducing the budget deficit, monetary expansion increases the current-account deficit slightly throughout much of CBO's simulation for two reasons. First, the higher real GNP caused by monetary stimulation spurs imports. In addition, while fiscal contraction lowers prices, the monetary stimulus drives up prices. Because higher domestic prices, taken by themselves, offset at least some of the real effects of

the depreciation in the nominal exchange rate, the real exchange rate depreciates less (2.8 percent by 1999) than it does in the case of budget deficit reduction to satisfy the Balanced Budget Act (7.9 percent by 1999), even though nominal depreciation is somewhat greater than in the case of budget deficit reduction. Although this monetary stimulation increases prices and real GNP in the United States, in the rest of the world it reduces prices slightly and causes real GNP to fluctuate around baseline levels by relatively small amounts.

HOW IMPORTANT IS FISCAL AND MONETARY POLICY COORDINATION IN REDUCING THE CURRENT-ACCOUNT DEFICIT?

Some analysts argue that domestic monetary expansion should accompany fiscal restraint to reduce the current-account deficit, so that an improvement in the current account does not come at the cost of slowing economic growth. This section provides a rough quantitative sense of how important such domestic coordination of macroeconomic policies is for reducing the current-account deficit.

Findings of Other Studies

The Federal Reserve study cited earlier found that reductions in the U.S. budget deficit combined with increases in the growth rate of the money supply resulted in virtually the same change in the current-account deficit as did similar deficit reductions when carried out without stimulative monetary policy. The combination of fiscal and monetary policy actions did not noticeably reduce the slowing of GNP growth that the budget deficit reduction alone had caused.

Results of CBO's Simulation

This CBO simulation of domestic policy coordination combines a cut in the budget deficit with a more expansive monetary policy. The change in fiscal policy was similar to that introduced in the first fiscal policy simulation (budget deficit reduction) discussed above: federal purchases are reduced by about 1 percent of GNP, or initially about $52 billion. However, this policy was combined in this simulation with a 4

percent increase in the level of money supply from baseline levels. The increase in the money supply is introduced gradually during the first year of the simulation and is then maintained at the 4 percent higher level through the end of the 10-year simulation period. These policies result in budget deficit reductions rising from $63 billion in 1989 to $133 billion by 1994, after all feedback effects are taken into account (see Figure 10).

This combination of domestic policies initially reduces the current-account deficit less than does budget deficit reduction alone, but after a few years it is about as effective as fiscal policy alone. (This finding is consistent with the earlier finding that monetary policy has little lasting effect on the current account.) The fall in the current-account deficit ranges from $11 billion in 1990 to $30 billion in 1994, and $67 billion by 1999. The dollar depreciates 6.1 percent in real terms by 1994, and 6.7 percent by 1999 (see Appendix B, Table B-5).

The combination of U.S. budget deficit reduction and monetary expansion increases GNP and reduces inflation slightly from baseline levels in the United States. In the rest of the world, effects on GNP are slight, while the inflation rate is reduced slightly. For example, the increase in U.S. GNP, stemming from increases in both investment and net exports, is about 1 percent relative to baseline levels by 1994, and over 2 percent in 1999. The reduction in prices in the rest of the world from baseline levels amounts to nearly 3 percent by 1999, and stems both from the slight reduction in aggregate demand (from lower U.S. demand for exports) as well as the appreciation of the exchange rate in the rest of the world.

HOW IMPORTANT IS INTERNATIONAL POLICY COORDINATION FOR CURRENT-ACCOUNT DEFICIT REDUCTION?

Some economists argue that U.S. policies to reduce the current-account deficit should be accompanied by foreign fiscal and monetary expansion to stimulate demands for U.S. exports. Of course, such stimulation by authorities in other countries could affect their economies in ways that might make it undesirable from their point of view. In 1989, for example, many foreign industrial countries are facing inflationary pressures that could well be exacerbated by fiscal and monetary

stimulation designed to reduce current-account imbalances in the United States. Other countries--for example, Japan and West Germany--are also striving to reduce budget deficits as a means of increasing national saving as they prepare for demographic changes that will significantly increase the number of retired people in coming decades.

Findings of Other Studies

Since most simulation studies in the literature do not explicitly consider the issue of worldwide policy coordination, analysts must infer these effects from the results of domestic monetary policy actions and foreign macroeconomic policies, each simulated in isolation from a change in domestic fiscal policy. Such inferences, however, are apt to be somewhat imprecise, because the effects of two or more policy measures undertaken simultaneously may differ from the cumulated effects of individual actions taken separately.

The Brookings Institution study, *Empirical Macroeconomics for Interdependent Economies*, finds that expansionary fiscal policy actions in the rest of the OECD countries reduce the U.S. current-account deficit, but that this effect is much smaller than the effect of equivalent U.S. fiscal restraint on its economy. By 1994, the improvement in the current account from raising foreign government purchases by 1 percent of GNP amounts to roughly $6 billion, in terms of the CBO baseline projections of GNP. Foreign monetary expansion has hardly any effect on the U.S. current-account deficit, according to the Brookings study.

These findings are consistent with those of an earlier CBO study conducted for the Joint Economic Committee.[5] That study finds that, of the possible ways considered to improve the United States' current account, increases in foreign aggregate demand were the least effective in reversing a persistent imbalance.

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5. See Edward M. Gramlich, "Statement before the Joint Economic Committee, U.S. Congress," November 5, 1987. The findings are also consistent with results in the study, cited earlier, by the International Monetary Fund.

Results of CBO's Simulations

CBO simulated coordinated changes in monetary and fiscal policies both in the United States and in all other countries. The findings suggest that, if the foreign component is large enough, such coordinated policy actions could reduce the U.S. current-account deficit noticeably more than either U.S. budget deficit reduction alone or policy coordination in the United States alone. The larger reduction in the U.S. current-account deficit produced by foreign policy involvement occurs because of a significant increase in income and prices abroad, resulting from the foreign economic stimulus. Over time, however, this increase in foreign income disappears, while foreign prices continue to rise relative to U.S. prices. By the end of the simulation period, the additional improvement in the U.S. current-account deficit stemming from foreign economic stimulus results mostly from the increase in foreign prices.

In this simulation, significant foreign monetary policy stimulation is combined with fiscal stimulus rather than being considered separately. As indicated above, however, foreign monetary policy--like domestic monetary policy--has little effect on the current-account balance. Thus, the fiscal component of the foreign economic stimulus is the important component.

There are two main reasons why the foreign fiscal policy changes in this simulation succeed in reducing the U.S. current-account deficit by more than in the simulation results reported in the study by the Brookings Institution. One reason is that the fiscal stimulus is assumed to be carried out in all foreign countries rather than just in the OECD countries. The other reason is that the simulation covers a 10-year period instead of a 6-year period, and the effects on the U.S. current account increase over time.

The combination of policy initiatives for this simulation of international policy coordination included: (1) a reduction in U.S. government expenditures of 1 percent of GNP, amounting to $52 billion in 1989 and $71 billion by 1999; (2) a phased-in increase in the U.S. money supply of 4 percent relative to baseline levels; (3) an increase in government spending in the rest of the world amounting to 1 percent of GNP, resulting in more than a 7 percent increase in the rest of the world's real government expenditures; and (4) a phased-in increase in

the rest of the world's money supply of 4 percent relative to baseline levels. Together these domestic and foreign policy actions reduce the U.S. budget deficit by $67 billion initially and by $134 billion in 1994 (see Figure 10).

The effect of international policy coordination in CBO's simulation is to reduce the U.S. current-account deficit faster and by more than would have been true without foreign economic stimulus. The current-account deficit declines by amounts growing from $19 billion in 1990 to $93 billion after 10 years. Compared with CBO's simulation of coordinated monetary and fiscal policy changes in the United States alone, this reduction is $10 billion greater in 1994, and $26 billion greater in 1999.

By the end of the simulation period, the main factor in bringing about the larger trade improvement is the relatively sharp real depreciation of the dollar, which reflects increased prices in the rest of the world relative to prices in the United States. Real dollar depreciation by 1999 is 9.1 percent below the baseline in this simulation, or 2.4 percentage points more than in the simulation of monetary and fiscal policy coordination in the United States alone. This greater real depreciation occurs mostly because prices in the rest of the world increase by more than 3 percent from baseline levels. (Higher foreign prices contribute directly to real depreciation of the dollar, because they make U.S. goods more competitive with those produced abroad.) By contrast, in the simulation of monetary and fiscal policy changes in the United States alone, prices in the rest of world are nearly 3 percent lower than baseline levels in 1999.

In this simulation of international policy coordination, U.S. and, especially, foreign real GNP are higher until the end of the period, compared with the simulation of policy coordination within the United States alone. The reason for the greater gain in foreign GNP is that foreign monetary and fiscal policy both are stimulative, in contrast to the case in the United States where monetary stimulus is coupled with fiscal restraint. Relative to the results from the simulation of domestic policy coordination alone, these gains in GNP disappear by the end of the simulation period, largely because short-term interest rates rise by more over time, even though they remain below baseline levels.

International Policy Coordination Excluding the Newly Industrializing Countries

Because the foregoing results make unrealistic assumptions about the behavior of the newly industrializing countries (NICs), they may overstate the reduction in the U.S. current-account deficit from international policy coordination.[6] Not all foreign countries respond to international economic developments in the same way. For example, while most developed countries have allowed the dollar to depreciate relative to their currencies, most NICs have not done so until recently.

Because of such differences in the response of the rest of the world, CBO performed another simulation of international policy coordination. In this simulation, exchange rates and GNP levels in the NICs are fixed at their baseline settings, thereby preventing the NICs from responding to policy changes in the United States and elsewhere in the world. Other aspects of the experiment were the same as for the previous one. This simulation is perhaps more realistic than the one with the NICs included, since internal fiscal objectives in the NIC region can be quite different--for example, in meeting IMF lending guidelines--from those of the major developed economies.

The results of this simulation indicate that roughly half of the improvement in the U.S. current account resulting from foreign economic stimulus reported in the previous simulation is removed when responses by the NICs are excluded (see Table B-7 in Appendix B). The U.S. current-account deficit falls by $81 billion by 1999, roughly halfway between the $93 billion improvement reported in the simulation of full international coordination and the $67 billion improvement shown in the simulation of policy coordination within the United States alone. The overall reduction comes more quickly than with U.S. policy coordination alone, although it is not as quick as the improvement that occurs with full international coordination.

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6. In this study, the category "newly industrializing countries" includes Brazil, Hong Kong, Malaysia, Mexico, Philippines, Singapore, South Korea, and Taiwan.

THE EFFECTS OF AUTONOMOUS DOLLAR DEPRECIATION ON THE CURRENT ACCOUNT

Aside from specific fiscal or monetary policy actions, many factors can cause exchange rates to change, and these changes can affect the current-account balance. For example, if investors do not see assets denominated in different currencies as perfect substitutes for each other, they might gradually become less interested in holding dollar-denominated securities at current expected rates of return, particularly as such securities come to occupy a greater share of overall portfolios. An increasing share devoted to dollars makes these portfolios more and more risky. In such a case, the dollar would depreciate as demand for dollars declined, reflecting a growing "risk premium" or increased rate of return required by investors in dollar-denominated assets.

This depreciation should affect the balance of payments. It is called an autonomous depreciation, since it is not the direct result of any domestic or foreign policy change. This section examines the effect on the current account of such a dollar depreciation, assuming that fiscal and monetary policies are unchanged.

Autonomous depreciation should also affect GNP in the United States and in other countries, though it is difficult to predict whether its effects on GNP will be expansionary or restrictive for a given country. In the United States, for example, depreciation of the dollar stimulates GNP by increasing net exports. Offsetting this stimulus, however, are restrictive effects stemming from the higher U.S. prices that depreciation brings about--namely, reduction in the real money supply and the real levels of income and wealth. The overall effect on GNP depends on the relative strengths of these opposing effects. The discussion below presents model results that show the effect on GNP.

Findings of Other Studies

The Brookings Institution study cited earlier finds that an autonomous depreciation of the dollar of 10 percent a year for three years could reduce the current-account deficit significantly. The size of the reduction varies widely, however, among models showing a sustained improvement. It ranges from $10 billion to $120 billion by the end of the

six-year period in the simulation, based on CBO baseline projections of GNP. The models in the Brookings study that report the greatest reduction in the current account tend to be the ones reporting a negative overall impact on real GNP.

Results of CBO's Simulation

Without a change in monetary or fiscal policy, how much of an abrupt depreciation in the dollar would be required to produce approximately the same reduction in the current-account deficit as was obtained with fiscal restraint sufficient to satisfy the Balanced Budget Act--that is, a reduction in the current-account deficit of more than $40 billion by 1993? CBO's simulation determined that the amount of real depreciation required from baseline levels is approximately 8 percent in 1990, falling to about 5 percent by 1993 (see Figure 8 and for more details Appendix B, Table B-8). This amount is a sharper and larger initial depreciation than that observed in the simulation of a budget deficit reduction sufficient to meet the Balanced Budget Act targets. More depreciation is needed early in this simulation because the current account does not benefit from the restrictive effects of fiscal restraint on income and the demand for imports.

The depreciation in this simulation increases interest rates and inflation in the United States and does the reverse in the rest of the world. Consequently, even though real U.S. GNP initially rises slightly because of the increase in real net exports that the depreciation brings about, GNP later falls, primarily because of reduced investment caused by increased interest rates. Although GNP in the rest of the world is initially reduced by lower exports to the United States, it is eventually increased by reduced interest rates abroad.

CONCLUSIONS

Among the options policymakers have for reducing the U.S. current-account deficit, reducing the federal budget deficit--and thereby cutting spending or absorption relative to GNP--is the most promising. Evidence from a number of economic models presented in this chapter suggests that the current-account deficit should fall by roughly 35 percent to 55 percent as much as the reduction in the budget deficit

needed to meet the Balanced Budget Act targets. In dollar terms, this amounts to an improvement of $40 billion to $65 billion relative to the 1994 baseline level. While budget deficit reductions would also work initially to slow GNP growth slightly both in the United States and elsewhere in the world, in later years they could increase GNP above what it would otherwise have been.

Relying on exchange-rate depreciation brought about by autonomous developments in financial markets, as the United States has done at times, could reduce the current-account deficit by an equivalent amount, but only if attitudes among investors toward world markets or other developments change sufficiently to bring about a sustained depreciation. A relatively large and abrupt real depreciation of 5 percent to 8 percent relative to baseline levels maintained for a few years would be needed to produce the same reduction in the current-account deficit that is likely to stem from meeting the Balanced Budget Act targets. Meeting those budget targets would entail much less real depreciation throughout this period.

Additional moderate reductions in the current account could occur if foreign governments stimulated their economies significantly at the same time that the United States reduced its budget deficit. Foreign stimulation produces a lasting improvement in the U.S. deficit only if it is strong enough to increase foreign prices significantly. For this reason, it seems unlikely to occur.

APPENDIXES

APPENDIX A

"MINIMOD" AND OTHER "WORLD" ECONOMIC MODELS

The Congressional Budget Office drew the estimates reported in Chapter III from various large computer-based "econometric" models of the world economy. These models are systems of equations describing the behavior of different economic sectors both here and abroad. Econometric models are widely used to develop estimates of policy impacts. In part, they are widely employed because such models are largely based on statistical relationships that provide the only available quantitative measures of how the economy behaves. In addition, their many equations are able to capture the interactions of different sectors of the economy, and can therefore make more sophisticated estimates of economic responses than could be done with simpler procedures.

The models underlying the estimates reported in Chapter III represent all or most of the economies of the world, rather than just the U.S. economy. In this respect, they differ from the models most frequently used for policy analysis. CBO chose these "world" models for this study because its focus on the current-account balance of payments between the United States and the rest of the world makes the behavior of other economies particularly relevant. Indeed, some of the topics discussed in this study, such as the importance of policy coordination between the United States and the rest of the world, would be impossible to analyze quantitatively without such models. World models also make the analysis of other topics more thorough than do models that explicitly represent only the U.S. economy.

To reflect a range of views, CBO has generally based its analysis of macroeconomic policies on more than one econometric model. World econometric models, however, are quite cumbersome, and most are not commercially available. Thus, it was impractical for CBO to perform its own simulations with many of them.

Instead, this study reports previously published simulation results by other organizations, which are based on various models and provide a range of likely outcomes (see Table A-1). Because these results in-

evitably did not address all the questions explored in Chapter III, however, CBO had to undertake some of its own simulations. It did these simulations by using a modified version of one relatively simple world model, MINIMOD, developed by staff members at the International Monetary Fund (IMF).

TABLE A-1. CHARACTERISTICS OF WORLD ECONOMIC MODELS USED IN THIS STUDY

Model	Model Type	Expectation	Exchange-Rate Determination
MINIMOD (CBO version)	Neoclassical synthesis	Adaptive	Interest differentials
MINIMOD (International Monetary Fund version)	Neoclassical synthesis	Model consistent	Interest differentials
DRI International Model (Data Resources, Inc.)	Neoclassical synthesis	Adaptive	Interest differentials and current-account balances
Multi-Country Model (Federal Reserve Board)	Neoclassical synthesis	Adaptive	Interest differentials
COMPACT (European Community)	Neoclassical synthesis	Adaptive	Relative asset holdings
MULTIMOD (International Monetary Fund)	Neoclassical synthesis. Markets do not clear in the short run because labor contracts constrain wage adjustment.	Model consistent	Interest differentials
INTERMOD (Canadian Ministry of France)	Neoclassical synthesis (closely related to MULTIMOD).	Both adaptive model consistent simulations	Interest differentials
TAYLOR (Professor John Taylor)	Neoclassical synthesis. Markets do not clear in the short run because labor contracts constrain wage adjustment.	Model consistent	Interest differentials
INTERLINK (Organization for Economic Cooperation and Development)	Neoclassical synthesis	Adaptive	Relative asset holdings

SOURCE: Congressional Budget Office.

Most of the models, including MINIMOD, use a version of the mainstream "neoclassical synthesis" approach to domestic demand and supply. Under this approach, shifts in total demand are among the chief causes of most short-run economic developments, since prices and wages do not adjust fast enough in the short run to ensure continuous full use of available resources. The reasons for slow adjustment of prices and wages are shown explicitly in some models, but not in others. Shifts in demand are brought about by changes in exports, exchange rates, government fiscal and monetary policies, or other developments.

In the longer run, "supply side" conditions predominate in determining the growth paths of economies in "neoclassical synthesis" models. Particularly important in the long-run predictions of all the models surveyed in this study are shifts in saving and investment, which determine capital stocks and with them the future levels of output and income. The models differ, however, in the extent to which they predict that other aspects of supply, such as labor supply, vary in response to changes in policy. MINIMOD incorporates no long-run variability in labor supply.

An important difference among models has to do with their assumptions about how people's expectations of future economic developments are formed. In traditional "adaptive-expectations" models, such as CBO's version of MINIMOD, expectations are determined by past changes in various important economic conditions. Such models show relatively sluggish responses of such variables as exchange rates and interest rates to changes in policies or other developments. In more modern "rational-" or "consistent-expectations" models, by contrast, people are assumed to anticipate the likely effects of policy changes, and interest rates and exchange values tend to change more quickly as a result. About half of the models surveyed in Chapter III assume consistent expectations.

Models also differ in their approaches to determining exchange rates. This difference concerns whether or not they assume that financial assets denominated in different currencies are highly substitutable in the eyes of private investors. When high substitutability is assumed, as in MINIMOD, changes in exchange rates are determined primarily by interest-rate differentials among countries. In other

cases, exchange rates can be affected by such factors as relative holdings of financial assets denominated in different currencies.

For this study, CBO modified the IMF model by incorporating its own equations for trade flows and by changing other equations so that their properties would conform to assumptions made in earlier CBO analyses.[1] The properties of the modified version of MINIMOD are generally similar to the properties of the other models surveyed in Chapter III.

1. For a description of the original version of MINIMOD, see Richard D. Haas and Paul R. Masson, "MINIMOD: Specification and Simulation Results," *International Monetary Fund Staff Papers*, vol. 33, no. 4 (December 1986). For a detailed description of CBO's adaptation of this model, see Congressional Budget Office, "Macroeconomic Policies to Reduce the Trade Deficit," Staff Working Paper (August 1989).

APPENDIX B

STATISTICAL TABLES

TABLE B-1. CBO SIMULATION RESULTS: ECONOMIC EFFECTS OF REDUCTION IN FEDERAL PURCHASES AMOUNTING TO 1 PERCENT OF GNP (By calendar years, in percentage changes from baseline levels)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
United States											
Real GNP	-1.5	-1.5	-1.2	-0.9	-0.5	-0.1	0.3	0.6	1.0	1.3	1.6
Consumption	-0.8	-1.1	-1.0	-0.9	-0.7	-0.5	-0.3	0.0	0.2	0.4	0.6
Investment	-2.0	-1.8	-0.9	0.0	0.9	1.9	2.8	3.7	4.6	5.4	6.1
Government	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1
Net exports[a]	12.9	18.2	22.7	27.3	32.2	37.5	43.2	49.5	56.4	63.0	69.3
Price Level	-0.2	-0.5	-1.0	-1.5	-2.0	-2.5	-3.0	-3.5	-3.9	-4.2	-4.5
Short-Term Interest Rate[b]	-1.4	-1.7	-1.9	-2.1	-2.2	-2.4	-2.5	-2.6	-2.7	-2.7	-2.6
Long-Term Interest Rate[b]	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.3	-0.3	-0.4	-0.4	-0.5
Deficit Reduction:											
Current account[c]	11.0	14.7	17.9	21.3	25.1	29.4	34.3	39.8	46.5	54.0	62.0
Government[c]	33.1	38.9	49.0	61.2	75.2	90.6	107.2	124.3	142.3	161.1	180.6
Rest of the World											
Real GNP	-0.2	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	0.0	0.1	0.3	0.4
Consumption	-0.1	-0.1	0.0	0.1	0.2	0.4	0.6	0.8	1.0	1.2	1.4
Investment	-0.1	-0.1	-0.1	0.0	0.2	0.4	0.7	1.1	1.4	1.8	2.3
Government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net exports[d]	-2.5	-3.6	-4.6	-5.4	-6.3	-7.1	-7.9	-8.7	-9.6	-10.4	-11.1
Price Level	-0.1	-0.2	-0.3	-0.6	-0.8	-1.1	-1.4	-1.7	-2.1	-2.4	-2.8
Short-Term Interest Rate[b]	-0.2	-0.3	-0.4	-0.5	-0.6	-0.8	-0.9	-1.0	-1.2	-1.3	-1.5
Long-Term Interest Rate[b]	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2
Deficit Reduction:											
Current account[c]	-8.7	-11.4	-13.4	-15.4	-17.2	-18.9	-20.6	-22.8	-25.8	-29.3	-32.9
Government[c]	-2.9	-4.2	-4.8	-5.2	-5.6	-5.9	-6.3	-7.8	-8.5	-9.3	-10.2
Exchange Rate	-0.6	-1.2	-1.7	-2.3	-2.8	-3.2	-3.7	-4.3	-4.9	-5.4	-5.9
Real Exchange Rate	-0.8	-1.5	-2.3	-3.1	-3.9	-4.6	-5.3	-6.1	-6.7	-7.2	-7.5

SOURCE: Congressional Budget Office calculations.

a. Difference from baseline in billions of 1982 dollars.
b. Difference from baseline in percentage points.
c. Difference from baseline in billions of dollars.
d. Difference from baseline in billions of 1972 dollars.

TABLE B-2. CBO SIMULATION RESULTS: ECONOMIC EFFECTS OF REDUCTION IN FEDERAL PURCHASES AMOUNTING TO 1 PERCENT OF GNP, WITH EXCHANGE RATES HELD AT BASELINE (By calendar years, in percentage changes from baseline levels)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
United States											
Real GNP	-1.5	-1.6	-1.3	-1.0	-0.7	-0.3	0.1	0.5	0.9	1.3	1.6
Consumption	-0.8	-1.1	-1.1	-1.0	-0.8	-0.6	-0.3	-0.1	0.2	0.4	0.7
Investment	-2.0	-1.9	-1.0	-0.1	0.9	2.0	3.1	4.2	5.3	6.4	7.5
Government	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1
Net exports[a]	11.6	14.3	16.1	17.9	20.1	22.5	25.1	27.9	30.5	32.9	34.9
Price Level	-0.2	-0.6	-1.1	-1.7	-2.3	-3.0	-3.7	-4.4	-5.0	-5.5	-6.0
Short-Term Interest Rate[b]	-1.5	-1.9	-2.2	-2.4	-2.7	-3.0	-3.3	-3.5	-3.7	-3.9	-4.0
Long-Term Interest Rate[b]	-0.1	-0.1	-0.1	-0.2	-0.2	-0.3	-0.4	-0.4	-0.5	-0.5	-0.6
Deficit Reduction:											
Current account[c]	10.6	12.8	13.8	14.6	15.2	15.5	15.5	15.0	14.2	13.0	11.4
Government[c]	33.2	38.8	48.6	60.8	75.0	91.0	108.4	126.6	145.3	164.7	184.6
Rest of the World											
Real GNP	-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.2	-0.1	0.0	0.1	0.2
Consumption	-0.1	-0.2	-0.1	-0.1	0.0	0.1	0.3	0.4	0.5	0.7	0.8
Investment	-0.1	-0.1	-0.1	-0.1	0.1	0.2	0.4	0.7	0.9	1.2	1.5
Government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net exports[d]	-2.3	-3.2	-3.8	-4.4	-5.0	-5.6	-6.2	-6.7	-7.2	-7.6	-7.9
Price Level	0.0	-0.1	-0.2	-0.3	-0.5	-0.6	-0.8	-1.1	-1.3	-1.5	-1.8
Short-Term Interest Rate[b]	-0.1	-0.2	-0.3	-0.3	-0.4	-0.5	-0.6	-0.7	-0.8	-0.9	-1.0
Long-Term Interest Rate[b]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1
Deficit Reduction:											
Current account[c]	-7.9	-9.2	-9.6	-9.8	-9.8	-9.7	-9.4	-8.9	-8.4	-7.8	-6.8
Government[c]	-2.7	-4.1	-4.8	-5.4	-5.9	-6.3	-6.7	-7.7	-8.3	-8.8	-9.1
Exchange Rate	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Real Exchange Rate	-0.2	-0.5	-0.9	-1.4	-1.9	-2.4	-2.9	-3.3	-3.7	-4.1	-4.3

SOURCE: Congressional Budget Office calculations.
a. Difference from baseline in billions of 1982 dollars.
b. Difference from baseline in percentage points.
c. Difference from baseline in billions of dollars.
d. Difference from baseline in billions of 1972 dollars.

TABLE B-3. CBO SIMULATION RESULTS: ECONOMIC EFFECTS OF REDUCTION IN FEDERAL PURCHASES TO MEET BALANCED BUDGET ACT TARGETS
(By calendar years, in percentage changes from baseline levels)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
United States											
Real GNP	0.0	-1.5	-2.7	-3.0	-2.5	-0.6	0.8	1.9	2.7	3.1	3.4
Consumption	0.0	-0.6	-1.6	-2.1	-2.2	-1.3	-0.3	0.5	1.1	1.5	1.7
Investment	0.0	-2.0	-3.4	-3.3	-1.8	1.8	4.7	6.7	8.0	8.7	9.0
Government	0.0	-5.7	-9.3	-11.2	-11.1	-7.2	-5.2	-3.8	-2.8	-2.2	-2.0
Net exports[a]	0.0	13.0	27.4	41.4	52.0	53.8	56.6	60.4	64.6	68.1	70.7
Price Level	0.0	-0.1	-0.6	-1.3	-2.3	-3.3	-4.1	-4.7	-5.1	-5.2	-5.2
Short-Term Interest Rate[b]	0.0	-1.4	-2.8	-3.8	-4.3	-3.6	-3.1	-2.7	-2.3	-2.0	-1.8
Long-Term Interest Rate[b]	0.0	0.0	-0.1	-0.2	-0.3	-0.3	-0.4	-0.4	-0.5	-0.5	-0.5
Deficit Reduction:											
Current account[c]	0.0	12.3	24.9	36.9	44.8	42.2	41.8	43.1	46.6	51.4	57.3
Government[c]	0.0	38.7	71.8	101.8	123.5	117.6	126.1	135.8	145.6	156.1	167.4
Rest of the World											
Real GNP	0.0	-0.2	-0.5	-0.7	-0.7	-0.5	-0.2	0.1	0.3	0.6	0.7
Consumption	0.0	-0.1	-0.2	-0.2	-0.1	0.3	0.7	1.0	1.4	1.6	1.9
Investment	0.0	0.0	-0.2	-0.2	-0.2	0.1	0.6	1.2	1.8	2.4	3.0
Government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net exports[d]	0.0	-2.2	-5.4	-8.4	-10.6	-10.5	-10.3	-10.2	-10.4	-10.5	-10.5
Price Level	0.0	0.0	-0.2	-0.5	-0.8	-1.3	-1.7	-2.2	-2.6	-3.0	-3.4
Short-Term Interest Rate[b]	0.0	-0.1	-0.4	-0.6	-0.9	-1.0	-1.1	-1.3	-1.4	-1.5	-1.6
Long-Term Interest Rate[b]	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2
Deficit Reduction:											
Current account[c]	0.0	-9.2	-18.1	-25.7	-29.8	-26.8	-24.9	-24.3	-25.4	-27.5	-30.0
Government[c]	0.0	-3.1	-7.0	-10.3	-11.9	-9.7	-7.5	-7.2	-6.4	-6.4	-7.0
Exchange Rate	0.0	-0.5	-1.5	-2.8	-4.0	-4.7	-5.2	-5.7	-6.0	-6.2	-6.2
Real Exchange Rate	0.0	-0.6	-1.9	-3.7	-5.5	-6.7	-7.5	-8.1	-8.4	-8.3	-7.9

SOURCE: Congressional Budget Office calculations.
a. Difference from baseline in billions of 1982 dollars.
b. Difference from baseline in percentage points.
c. Difference from baseline in billions of dollars.
d. Difference from baseline in billions of 1972 dollars.

TABLE B-4. CBO SIMULATION RESULTS: ECONOMIC EFFECTS OF A MONETARY EXPANSION COMPARABLE TO THE BALANCED BUDGET ACT SIMULATION
(By calendar years, in percentage changes from baseline levels)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
United States											
Real GNP	0.0	0.2	0.7	1.4	2.0	2.4	2.7	2.8	2.8	2.8	2.7
Consumption	0.0	0.0	0.2	0.4	0.8	1.2	1.4	1.6	1.8	1.8	1.9
Investment	0.0	0.5	1.6	3.1	4.8	5.9	6.7	7.1	7.4	7.5	7.4
Government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net exports[a]	0.0	0.6	0.6	2.5	5.1	7.8	9.3	9.6	9.3	8.0	5.8
Price Level	0.0	0.0	0.1	0.2	0.5	1.0	1.6	2.4	3.3	4.3	5.4
Short-Term Interest Rate[b]	0.0	-1.4	-2.8	-3.8	-4.3	-3.6	-3.1	-2.7	-2.4	-2.0	-1.8
Long-Term Interest Rate[b]	0.0	0.0	-0.1	-0.2	-0.3	-0.3	-0.4	-0.4	-0.5	-0.5	-0.5
Deficit Reduction:											
Current account[c]	0.0	-0.6	-3.7	-5.3	-5.6	-3.1	0.2	- 3.4	7.4	11.4	15.7
Government[c]	0.1	10.0	31.9	56.2	80.2	91.7	100.2	108.8	117.6	126.2	134.3
Rest of the World											
Real GNP	0.0	-0.1	-0.2	-0.2	-0.2	-0.1	0.0	0.1	0.2	0.3	0.4
Consumption	0.0	0.0	-0.1	0.0	0.0	0.2	0.3	0.5	0.6	0.6	0.7
Investment	0.0	0.0	0.0	0.1	0.1	0.3	0.5	0.7	0.9	1.1	1.3
Government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net exports[d]	0.0	-0.7	-2.2	-3.6	-4.6	-4.5	-4.0	-3.5	-3.0	-2.3	-1.5
Price Level	0.0	0.0	-0.1	-0.2	-0.4	-0.6	-0.7	-0.9	-1.0	-1.0	-1.0
Short-Term Interest Rate[b]	0.0	-0.1	-0.2	-0.3	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4
Long-Term Interest Rate[b]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1
Deficit Reduction:											
Current account[c]	0.0	0.0	1.3	1.6	1.3	0.0	-1.2	-2.0	-3.2	-4.5	-5.7
Government[c]	0.0	-1.3	-2.8	-4.2	-4.6	-3.4	-2.3	-1.8	-0.8	0.2	1.3
Exchange Rate	0.0	-0.6	-1.7	-3.0	-4.5	-5.4	-6.1	-6.9	-7.6	-8.2	-8.7
Real Exchange Rate	0.0	-0.6	-1.5	-2.6	-3.6	-3.9	-3.9	-3.9	-3.6	-3.3	-2.8

SOURCE: Congressional Budget Office calculations.
a. Difference from baseline in billions of 1982 dollars.
b. Difference from baseline in percentage points.
c. Difference from baseline in billions of dollars.
d. Difference from baseline in billions of 1972 dollars.

TABLE B-5. CBO SIMULATION RESULTS: ECONOMIC EFFECTS OF REDUCTION IN FEDERAL PURCHASES OF 1 PERCENT OF GNP AND 4 PERCENT INCREASE IN MONEY SUPPLY
(By calendar years, in percentage changes from baseline levels)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
United States											
Real GNP	-0.8	-0.5	0.0	0.5	0.9	1.3	1.5	1.7	1.9	2.0	2.1
Consumption	-0.6	-0.7	-0.5	-0.2	0.2	0.4	0.7	0.8	1.0	1.1	1.2
Investment	-0.5	0.6	2.2	3.5	4.6	5.5	6.3	6.8	7.3	7.6	7.8
Government	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1
Net exports[a]	9.9	20.4	26.0	31.1	35.8	40.0	43.8	47.9	52.5	56.6	60.2
Price Level	-0.2	-0.4	-0.6	-0.8	-1.0	-1.1	-1.1	-1.1	-1.1	-0.9	-0.8
Short-Term Interest Rate[b]	-4.4	-4.1	-3.8	-3.5	-3.3	-3.2	-3.0	-2.8	-2.6	-2.4	-2.2
Long-Term Interest Rate[b]	-0.2	-0.2	-0.3	-0.4	-0.4	-0.5	-0.5	-0.5	-0.6	-0.6	-0.6
Deficit Reduction:											
Current account[c]	3.6	11.4	15.0	19.5	24.5	29.9	35.7	42.1	49.9	58.4	67.3
Government[c]	63.1	70.3	86.0	101.5	117.2	132.9	148.6	164.3	180.7	197.8	215.5
Rest of the World											
Real GNP	-0.4	-0.4	-0.4	-0.3	-0.2	0.0	0.1	0.3	0.4	0.5	0.6
Consumption	-0.2	-0.1	0.1	0.3	0.5	0.7	0.9	1.1	1.3	1.4	1.6
Investment	0.0	-0.1	0.0	0.2	0.5	0.9	1.3	1.7	2.1	2.5	2.9
Government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net exports[d]	-4.7	-5.9	-6.8	-7.4	-7.9	-8.2	-8.4	-8.5	-8.8	-9.1	-9.3
Price Level	-0.2	-0.4	-0.6	-0.9	-1.2	-1.6	-1.9	-2.1	-2.4	-2.7	-2.9
Short-Term Interest Rate[b]	-0.3	-0.5	-0.6	-0.7	-0.8	-0.9	-1.0	-1.1	-1.2	-1.3	-1.4
Long-Term Interest Rate[b]	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2
Deficit Reduction:											
Current account[c]	-4.6	-10.7	-13.2	-15.7	-17.9	-19.7	-21.3	-23.3	-26.5	-30.1	-33.8
Government[c]	-4.8	-5.9	-5.8	-5.6	-5.3	-5.1	-5.0	-6.2	-6.5	-6.9	-7.5
Exchange Rate	-2.2	-3.5	-4.5	-5.3	-6.0	-6.5	-6.9	-7.5	-8.0	-8.4	-8.7
Real Exchange Rate	-2.2	-3.5	-4.5	-5.2	-5.7	-6.1	-6.2	-6.5	-6.7	-6.7	-6.7

SOURCE: Congressional Budget Office calculations.

a. Difference from baseline in billions of 1982 dollars.
b. Difference from baseline in percentage points.
c. Difference from baseline in billions of dollars.
d. Difference from baseline in billions of 1972 dollars.

TABLE B-6. CBO SIMULATION RESULTS: ECONOMIC EFFECTS OF FISCAL AND MONETARY POLICY CHANGES IN THE UNITED STATES AS IN APPENDIX TABLE B-5, COMBINED WITH EXPANSIONARY FISCAL AND MONETARY POLICIES IN THE REST OF THE WORLD
(By calendar years, in percentage changes from baseline levels)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
United States											
Real GNP	-0.5	-0.3	0.3	0.7	1.1	1.4	1.6	1.7	1.8	1.9	1.9
Consumption	-0.5	-0.5	-0.3	0.1	0.3	0.6	0.7	0.9	0.9	1.0	1.0
Investment	-0.1	1.0	2.4	3.6	4.6	5.3	5.8	6.2	6.4	6.4	6.3
Government	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1
Net exports[a]	14.9	24.5	30.0	35.7	41.4	47.2	53.1	59.5	66.5	73.3	79.9
Price Level	-0.2	-0.4	-0.5	-0.6	-0.7	-0.7	-0.6	-0.4	-0.1	0.2	0.6
Short-Term Interest Rate[b]	-4.2	-3.8	-3.5	-3.2	-2.9	-2.7	-2.4	-2.1	-1.8	-1.4	-1.1
Long-term Interest Rate[b]	-0.2	-0.2	-0.3	-0.3	-0.4	-0.4	-0.5	-0.5	-0.5	-0.5	-0.5
Deficit Reduction:											
Current account[c]	11.2	19.2	22.8	27.5	32.9	39.4	47.0	56.1	66.8	79.1	93.0
Government[c]	67.2	75.0	90.3	105.0	119.7	134.3	148.7	163.1	178.2	194.1	210.7
Rest of the World											
Real GNP	1.2	1.5	1.4	1.4	1.3	1.2	1.1	0.9	0.8	0.6	0.4
Consumption	1.0	1.2	1.2	1.1	1.0	0.8	0.6	0.4	0.1	-0.1	-0.3
Investment	1.2	2.6	3.1	3.3	3.4	3.5	3.5	3.4	3.3	3.1	2.9
Government	7.2	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
Net exports[d]	-5.5	-6.5	-7.4	-8.0	-8.6	-9.0	-9.4	-9.8	-10.4	-11.1	-11.7
Price Level	0.0	0.2	0.3	0.6	0.9	1.2	1.6	1.9	2.3	2.7	3.1
Short-Term Interest Rate[b]	-2.1	-1.3	-1.2	-1.1	-1.0	-0.8	-0.7	-0.5	-0.4	-0.3	-0.1
Long-Term Interest Rate[b]	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Deficit Reduction:											
Current account[c]	-9.3	-15.2	-17.5	-19.9	-22.5	-25.0	-27.8	-31.6	-36.7	-42.7	-49.4
Government[c]	-4.4	-5.5	-3.9	-3.1	-2.3	-1.4	-0.4	-0.9	-0.3	0.4	1.1
Exchange Rate	-1.1	-2.1	-2.8	-3.5	-4.1	-4.5	-5.0	-5.5	-6.1	-6.5	-6.9
Real Exchange Rate	-1.4	-2.6	-3.7	-4.7	-5.5	-6.3	-7.0	-7.7	-8.3	-8.8	-9.1

SOURCE: Congressional Budget Office calculations.
a. Difference from baseline in billions of 1982 dollars.
b. Difference from baseline in percentage points.
c. Difference from baseline in billions of dollars.
d. Difference from baseline in billions of 1972 dollars.

TABLE B-7. CBO SIMULATION RESULTS: FISCAL AND MONETARY POLICY CHANGES IN THE UNITED STATES AND REST OF THE WORLD AS IN APPENDIX TABLE B-6, BUT WITH ECONOMIC VARIABLES HELD AT BASELINE LEVELS FOR NEWLY INDUSTRIALIZING COUNTRIES
(By calendar years, in percentage changes from baseline levels)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
United States											
Real GNP	-0.6	-0.4	0.1	0.6	1.0	1.3	1.6	1.8	1.9	2.0	2.1
Consumption	-0.5	-0.6	-0.3	0.0	0.3	0.5	0.7	0.9	1.0	1.1	1.1
Investment	-0.2	0.8	2.3	3.6	4.6	5.5	6.2	6.7	7.0	7.2	7.3
Government	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1	-5.1
Net exports[a]	12.8	21.0	25.5	30.2	35.2	40.5	45.9	52.0	58.6	65.1	71.6
Price Level	-0.2	-0.4	-0.7	-0.8	-1.0	-1.0	-1.0	-0.9	-0.7	-0.4	-0.1
Short-Term Interest Rate[b]	-4.3	-4.0	-3.7	-3.5	-3.3	-3.0	-2.8	-2.5	-2.2	-1.9	-1.6
Long-Term Interest Rate[b]	-0.2	-0.2	-0.3	-0.4	-0.4	-0.5	-0.5	-0.5	-0.6	-0.6	-0.6
Deficit Reduction:											
Current account[c]	9.5	16.6	19.3	23.0	27.5	32.8	39.3	47.2	56.9	68.1	81.1
Government[c]	66.5	74.1	89.5	104.5	119.7	134.9	150.1	165.2	181.1	197.6	214.9
Rest of the World											
Real GNP	1.3	1.5	1.5	1.4	1.3	1.2	1.1	1.0	0.8	0.7	0.6
Consumption	1.0	1.3	1.2	1.1	1.0	0.8	0.7	0.4	0.2	0.0	-0.2
Investment	1.2	2.6	3.1	3.4	3.5	3.5	3.5	3.4	3.3	3.1	2.9
Government	7.2	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3	7.3
Net exports[d]	-5.2	-6.1	-6.9	-7.5	-8.0	-8.4	-8.8	-9.2	-9.7	-10.3	-10.9
Price Level	0.1	0.2	0.4	0.6	0.9	1.2	1.6	2.0	2.4	2.8	3.1
Short-Term Interest Rate[b]	-2.1	-1.3	-1.2	-1.1	-0.9	-0.8	-0.6	-0.5	-0.3	-0.2	-0.1
Long-Term Interest Rate[b]	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Deficit Reduction:											
Current account[c]	-8.1	-13.4	-15.2	-17.2	-19.2	-21.2	-23.4	-26.4	-30.7	-35.8	-41.5
Government[c]	-4.1	-4.9	-3.1	-2.0	-0.9	0.4	1.9	2.1	3.6	5.3	7.1
Exchange Rate	-0.9	-1.7	-2.4	-3.0	-3.6	-4.1	-4.5	-5.1	-5.7	-6.2	-6.6
Real Exchange Rate	-1.2	-2.3	-3.4	-4.4	-5.3	-6.2	-7.0	-7.8	-8.5	-9.1	-9.5

SOURCE: Congressional Budget Office calculations.
a. Difference from baseline in billions of 1982 dollars.
b. Difference from baseline in percentage points.
c. Difference from baseline in billions of dollars.
d. Difference from baseline in billions of 1972 dollars.

TABLE B-8. CBO SIMULATION RESULTS: AUTONOMOUS EXCHANGE-RATE DEPRECIATION SUFFICIENT TO YIELD SAME CURRENT-ACCOUNT DEFICIT REDUCTION AS DOES BUDGET DEFICIT REDUCTION MEETING THE BALANCED BUDGET ACT TARGETS (By calendar years, in percentage changes from baseline levels)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
United States											
Real GNP	0.0	0.2	0.8	1.0	0.8	0.5	0.1	-0.3	-0.5	-0.6	-0.7
Consumption	0.0	-0.1	0.2	0.6	0.6	0.5	0.3	0.0	-0.1	-0.3	-0.3
Investment	0.0	0.1	0.9	0.9	0.1	-0.9	-1.9	-2.8	-3.4	-3.8	-4.1
Government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net exports[a]	0.0	16.4	44.7	47.7	44.2	38.1	29.3	22.3	20.6	23.4	27.8
Price Level	0.0	0.3	0.7	1.1	1.5	1.9	2.3	2.5	2.8	3.0	3.1
Short-Term Interest Rate[b]	0.0	0.6	1.4	1.8	2.0	2.1	2.0	1.9	1.9	2.0	2.1
Long-Term Interest Rate[b]	0.0	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3
Deficit Reduction:											
Current account[c]	0.0	3.2	26.8	38.0	41.3	44.1	42.8	40.8	42.5	49.2	59.0
Government[c]	0.0	-2.5	3.9	5.9	1.4	-4.6	-12.5	-20.9	-28.1	-33.1	-36.5
Rest of the World											
Real GNP	0.0	-0.2	0.0	0.1	0.3	0.4	0.5	0.5	0.5	0.4	0.4
Consumption	0.0	0.0	0.6	0.8	0.9	1.0	1.0	0.8	0.8	0.7	0.7
Investment	0.0	0.0	0.1	0.3	0.7	1.0	1.3	1.5	1.6	1.7	1.8
Government	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net exports[d]	0.0	-2.1	-5.7	-5.6	-4.8	-3.7	-2.4	-1.5	-1.3	-1.8	-2.4
Price Level	0.0	-0.5	-0.9	-1.2	-1.4	-1.5	-1.5	-1.4	-1.4	-1.3	-1.3
Short-Term Interest Rate[b]	0.0	-0.6	-0.6	-0.7	-0.7	-0.6	-0.6	-0.5	-0.5	-0.5	-0.5
Long-Term Interest Rate[b]	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Deficit Reduction:											
Current account[c]	0.0	-9.0	-23.7	-28.8	-28.6	-28.0	-25.5	-23.3	-23.7	-26.8	-31.5
Government[c]	0.0	-5.9	4.9	2.0	3.3	2.8	1.3	-1.7	-3.1	-3.8	-4.2
Exchange Rate	0.0	-8.8	-9.5	-8.9	-8.1	-6.5	-5.0	-4.4	-4.6	-5.1	-5.4
Real Exchange Rate	0.0	-8.0	-8.0	-6.8	-5.3	-3.2	-1.4	-0.5	-0.6	-0.9	-1.2

SOURCE: Congressional Budget Office calculations.
a. Difference from baseline in billions of 1982 dollars.
b. Difference from baseline in percentage points.
c. Difference from baseline in billions of dollars.
d. Difference from baseline in billions of 1972 dollars.